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THE INTERNATIONAL MEDICAL CONGRESS.

NO doubt, all the readers of the "International" are to a certain extent physicians, even if unprovided with diplomas to that effect, just as they are political economists and theologians. We all think that we know something about hygiene, the curing of colds, disease germs, and criminals supposed to be insane; nor do many of us decline to give advice to our friends about their health upon the ground that we do not know enough about the matter to make our advice of any special value. Whether this general diffusion and dilution of medical knowledge are peculiar to the so-called Aryan races, being relics of survival of the patriarchal organization of those far-away forefathers of ours in the Hindoo Koosh, where the head of each family was physician and priest as well as ruler, or whether they are derived from the ancient customs of Assyria and Rome, where, according to Pliny, there were for many years no physicians especially so designated, and persons seriously ill were taken in their beds to the market-place, in order that each passer-by might give the patient the benefit of his experience and advice, is uncertain. It is sufficient for us if the popular interest in and acquaintance with the medicine and medical men of the present day warrant a brief paper upon the largest and most important assemblage of physicians which has ever occurred, on this earth, at all events—namely, the great International Congress which met in London in the beginning of August last.

Certainly, no one of the three thousand medical men who were gathered in St. James's Hall at the opening ceremonies of the Congress ever witnessed a more impressive scene than was there presented. In that room were assembled medical representatives from every civilized

nation, amounting to nearly two per cent. of all the physicians in the world, and including at least three-fourths of all the scientific medical investigators, skilled general practitioners or celebrated specialists of the present day whose writings or teachings have made them known as contributors to the common stock of medical knowledge.

Upon the great stage, rising above each other tier on tier, were the faces of the princes of medicine, the leaders and pioneers of the age, the men whose names are known not only to the members of their profession, but to the whole civilized world. There, too, were other princes, the King of England and the Emperor of Germany of the future, the presence of each of whom, as the *Lancet* remarks, testified to the fact that the practitioners of the present day have been found able to cope with the gravest difficulties, as well as to the appreciation of those charged with affairs of State of the important part which medicine plays in the life of a nation. "While princes see so much to remind them of the divisions among nations, it must have been a matter of no little interest to these heirs of two of the greatest thrones in the world to have such a proof that there is much that binds men together. By patronizing such a Congress they were aiding in the highest work open to them—the binding of nations in one common bond of esteem, respect and mutual toleration."

And Professor Longmore, in his opening address before the section of Military Medicine, made a good point in saying that, while each nation or its representative is justified in maintaining a certain amount of reticence with regard to certain parts of military science and practice, upon which the safety or superiority in power of the country may be supposed to depend, such would not be the case in regard to measures for caring for the sick and wounded. "We can speak quite openly of all our professional plans and arrangements. If they contain any features better than those belonging to our neighbors of other countries, we have no fear of imparting them. We hope, indeed, if they are really better, that they may be adopted and turned to account, for, if practically applied, our own people may possibly be among those who will be benefited by their adoption. Even in time of war there are no enemies within our sphere of action."

Large as was the assemblage, and important as its proceedings seemed to those connected with it, it was curious to see how little attention it attracted in the great city. The addition of a few thousand strangers more or less to the ceaseless ebb and flow of the tide of life in the streets of London made no perceptible change. A goodly

number of cabmen learned for the first time the location of the building of the Royal College of Physicians, and the crowd about Burlington House, if not larger than a month before, when the rooms were occupied by the Exhibition of the Royal Academy, was, at least, of a very different character; but out of the immediate vicinity of these localities few knew anything of the Congress. The Irish Land bill, then before Parliament, and the condition of President Garfield, were topics of much greater interest.

When one remembers that within the ten mile circle of which Charing Cross is the centre there lives one three-hundredth part of the entire population of the earth, and nearly two per cent. of all those whom we commonly class as civilized people, this is not surprising, and one of the lessons of the Congress to its members was that the individual is by no means as important and indispensable a factor in the world's machinery as he is often disposed to think. There must have been few of those present throughout the meetings who did not feel that they had met better, wiser, stronger men than themselves, and in greater number than they had thought possible, and the few who did not have this experience must have been very great—or the reverse.

Into the details of the Congress, the addresses given, papers read, or the results of discussions, it is not proposed to enter. The speakers at all such meetings are, as a matter of course, disposed to regard it as an "epoch"—which gives rise to the accusation referred to by Dr. West, viz., that all such meetings are apt to resolve themselves into mutual admiration societies, where each one praises what the others have done, and all join to extol what their own generation has accomplished.

We all know, however, that medicine has made during the present century progress—and great progress—although it is sometimes difficult to distinguish between true progress and mere fashion, and we can also appreciate Reynaud's remark that between skepticism and medicine there has always existed a certain affinity, although this is not intended in the same sense as the ancient proverb, "*Ubi tres medici ibi duo athei.*"

The address of Dr. Raynaud on skepticism and medicine is, in fact, one of those which would be most interesting to the general public, both as regards the matter treated of and the style. Distinguishing between skepticism proper and philosophical doubt, which last is not only perfectly legitimate, but the first condition of all knowledge, and also between skepticism and the spirit of criticism, he inquires as to

the nature and causes of the skepticism of the men of the world on the subject of medicine.

"Skepticism flatters two of the deepest and not most honorable instincts of our nature—idleness and vanity. Idleness, by disposing of the need of seeking for truth, which always requires an effort to be discovered, and which, like the kingdom of God, suffers violence; and vanity, by setting us up to criticise and reckon the labors of others at a cheap rate, and to take to ourselves the gentle persuasion that we are superior to and see through the common prejudices.

"People talk a great deal of the progress of knowledge, but if we look around we shall find the same ignorant infatuation, the same mixture of the most unreasonable skepticism with the most infantine superstition, the same sneering, jesting spirit which believes nothing and yet believes everything, which refuses scientific medicine, and yet accepts without suspicion table turning, spiritualism and homeopathy, all without any other reason than pure fancy. And this disposition is not seen only, or even principally, among the common people. It is in the upper classes, in minds otherwise intelligent and cultivated, sometimes even in learned men."

No doubt very much of this skepticism of the laity arises from the skepticism of the physicians themselves, and this last is largely due to the fact, as Professor Raynaud points out, that every medical man, conscious of the dignity of his art, has a painful feeling of his powerlessness in the presence of so many ills, and of the contrast between the extent of the services which are expected of him and that which he is really able to render.

Is there, after all, such a thing, properly speaking, as medical science, or the science of medicine? Professor Huxley would assert that there could be no such thing apart from biology, and that, as biological science is still in its youth, so, also, it is but very recently that anything like a science of medicine has been developed. Whether medicine has done most toward developing biology, or biology toward improving medicine, is, however, something like the well-known question as to the relative priority of the chicken and the egg.

The three large volumes which will be formed of the proceedings of the Congress will give a birdseye view of the prevailing opinions among medical men upon those questions which are now of the greatest interest to them. They will not contain very much that is absolutely new, for in these days of journalism and the telegraph investigators do not brood long over their discoveries, although for

their own fame it would, no doubt, often be much better if they did. Nor are the extemporaneous discussions which follow the reading of papers at such meetings especially calculated to develop new truths, or to be of much more than temporary interest. The real discussions do not take place in the section rooms, but through the press for years after the meeting. Probably the greatest interest and value of the Congress to those who took part in it lay, not in the formal meetings or debates, but in the social intercourse, the casual conversations where two or three were gathered together, in which the President, Sir James Paget, rightly predicted that there would be "a larger interchange and diffusion of information than in any equal time and space in the whole past history of medicine; and that this interchange will be a larger increase, for in the mart of knowledge he that receives gains, and he that gives retains, and none suffer loss."

Each one who came was, no doubt, interested in some one or a few special matters, but, as a rule, his conversation about these was only with members of his own section, while outside of that he found himself drawn into discussions upon those points which affect all branches of medicine and are of interest to all medical men.

For example, the theory that certain diseases and complications of disease or of injury are due to minute, insoluble living particles of matter or organisms, in other words the germ theory, was one of these subjects of general interest. The physiologists, the surgeons and the sanitarians, all recognize the great practical importance of this theory as applied to those diseases with regard to which we may hope to apply it to explain their method of causation. No one whose opinion is of any importance in the matter now doubts that the disease known in man as malignant pustule, or in another form as the wool-sorters' disease, and in animals as splenic fever, or charbon, is caused by a minute vegetable organism, the *Bacillus Anthracis;* or that the so-called chicken cholera is due to another minute organism of the same class. Although much yet remains to be discovered with regard to the life history of these minute beings, more especially as to the possibility of their being developed under certain conditions of temperature, food, etc., from certain of the very common and entirely harmless *Bacilli* which may be found in every marsh, pool or river, still we have so far a scientific knowledge of them that we can predict their action, can cultivate them with as much certainty as we do vegetables in the garden, and, most important of all, we know that they can be so modified by cultivation that when inoculated in the living animal

they no longer produce death, but comparatively slight local effects, while at the same time the animal becomes insusceptible to the effects of the unmodified germ of the same kind, and is no longer liable to take the disease which this germ would produce upon an animal not so prepared for it. In other words, Pasteur, to whom this discovery is due, claims that he has found a method of vaccination against splenic fever and chicken cholera, and that upon the same principle other diseases due to minute organisms can each be provided with its own preventive vaccination. It may be well to make some allowance for the natural enthusiasm of the discoverer of so new and important a fact as that which Pasteur seems to have demonstrated by his experiments, and to remember that it by no means follows that in other diseases due to germs the organisms will behave in like manner; although it no doubt presents strong inducements for careful and repeated experiments in those diseases—such as measles, scarlet fever, yellow fever, whooping cough, etc.—which, as a rule, affect the same person but once in his life.

As yet, however, it must be confessed that we have no satisfactory evidence as to the nature of the causes of these diseases, so that we seem to be, as yet, a long way from preventive vaccination for them.

This germ theory is of interest to the surgeon and gynæcologist, because it is now believed by the majority that many of the evil effects of wounds, whether these are made by accident or purposely by the surgeon, are due to certain of these minute germs, or to their products, getting into the fluids of the living body. Instead of proposing vaccination against these germs, modern surgery tries to keep them out, and the various modes of doing this, with the results obtained, formed the subject of several papers, among which was the general address before the Congress from the representative from Germany, Professor Volkmann. He took the ground that the surgeon of the present day is responsible for the success of his treatment to a far greater extent than were the surgeons of twenty years ago, who, however learned and successful they might be, would not have been willing, in any case, to promise or guarantee a cure, nor would have reproached themselves in case of failure, holding themselves not responsible for the result of what were to them, at that time, uncontrollable circumstances.

"To-day," says Volkmann, "we may say, with the deepest conviction, that the surgeon is responsible for every disturbance that occurs in a wound; that it is his fault if even the slightest reaction or redness is developed within it; or, if an amputation is not healed by first

intention, he must reproach himself if, after an operation, bagging of pus occurs, and especially if death occurs from pyæmia. We know that a great responsibility rests upon us, but we also know that, with honest, well-directed knowledge of our subject, and the use of all our powers, we are able to satisfy its demands."

To those who are interested in the prevention rather than the cure of disease, the sanitarians, this germ theory has also a special interest and direct practical value. For, after all, those diseases which we either know or suspect to be due to these germs are but little amenable to treatment. They can be prevented, but not cured, and when the poison has once fully entered the system nearly all that can be done is to treat symptoms and complications, and to assist nature in resisting its effects and eliminating or destroying it, or in some cases it may be the habituating the system to its presence. This last phrase may perhaps require a little explanation. While, as Treviraneus remarks, every part of the body stands to every other part in the relation of an excreted substance, it is equally true that every part of the body stands to every other part of the body in the relation of a gland—that is, of a secreting organ. For example, it is possible that the immediate locality of the body in which a vaccine vesicle has flourished is so changed by the process that it continues thereafter to affect the constitution of the blood in such a way that the poison of small-pox cannot flourish therein; and this hypothesis accords with the fact that in the case of the loss of the limb upon which the vaccine cicatrix occurred the susceptibility to unmitigated small-pox has been found to return.

It is upon the essential truth of the main principle of the germ theory, namely, that a large number of those diseases which are most destructive to human life are due to particles of non-gaseous, insoluble, living matter, which particles have the power of growth and reproduction under favorable circumstances, that the modern sanitarian bases his attempts to avoid or destroy these causes. Abundance of sunlight and fresh air seem to be fatal to many of them, while all have their powers for evil destroyed by exposure to a dry heat of 260 degrees Fahrenheit, or a sufficiently long exposure to chlorine or the fumes of burning sulphur. By proper arrangements of house drains and sewers the sanitary engineer seeks to prevent these germs from passing into our houses. By isolation of cases of small-pox, diphtheria, etc., the health officer seeks to prevent the scattering of the germs of these diseases among the children of the community; and the skilled quarantine

official, in dealing with the ship known or suspected to contain the germs of yellow fever or cholera, seeks to apply to every cranny and nook in the ship where such germs might be lurking the cleansing and disinfecting agents which scientific experiments in the laboratory have shown will most certainly destroy them, and he seeks to do this with the least possible delay, not only that the vessel may be allowed to proceed at once upon her voyage for commercial reasons, but also to avoid the making her a floating pest-house by the development of these germs, as happened sometimes under the old forty days' system. It is evident, therefore, that all of us, whether physicians, legislators, merchants or others, have reason to be interested in this germ theory, and in the manner in which it was looked upon by this Congress, composed, as it was, of those whom we must esteem to be competent judges upon the merits of such a question.

Medicine, like law, theology, politics, agriculture, commerce, and other matters which furnish occupation to the world, is a matter of probabilities. In this world there is very little that is certain, and what little there is relates to the past, and not to the future. The verdict of the Congress—not, it is true, formally expressed, but none the less unmistakable—was that, while it seems at present more probable than not that the germ theory of organization is the true one for some of our most destructive diseases, it is certainly highly desirable that further investigation should be made in this direction; and from the point of view of mere expediency—the greatest happiness of the greatest number—it would seem that laymen should be much more urgent for such investigations than the physicians themselves, since the prevention of disease is certainly much more to their interest than it is to that of the doctors. This is, however, not by any means the case. On the contrary, we find a goodly number of laymen, and these of what are known as the educated classes, who are opposing such investigations; not, indeed, as a rule, directly, but indirectly, by their opposition to experiments on animals, and this brings us to another subject of which one heard very much at the Congress, not only in the formal meetings, but in private houses and casual conversations—namely, that of vivisection, and the folly of the English Government in its recent legislation with regard to it.

The case was stated by Mr. Simon, as follows:

At this most productive epoch in the growth of medical science our English studies have been interrupted. The Cruelty to Animals act has made it difficult or impossible for scientific observers any longer to follow in this country such a course of experiment as those which of

late, at the cost of relatively insignificant quantities of brute suffering, have tended to create an infinity of new resources of relief for the sufferings both of brute and human. The act does not in express terms interdict the performance of such courses of experiment. It nominally allows them to be done under a variety of limited licenses, which may be granted by the principal Secretary of State, but the limitations under which these licenses are granted, and the trouble, delay and friction which attend obtaining of any one of them are, practically, little better than prohibition.

Professor Virchow took, as the subject of his address, "The Value of Pathological Experiment," declaring that none of those who attack vivisection as an aid to science have any conception of the true importance of science nor of the value of this means of acquiring knowledge, and Professor Fraser brought out the fact that, while he could poison with strichnia, thus subjecting them to one of the most painful of deaths, as many animals as he chose, provided that he gave the drug by the mouth, he was not allowed to inject under the skin of the animal through a hollow needle a small quantity of even a harmless drug for the purpose of determining its properties, with a view to its use as a remedy in disease. The opposition to experiments upon living animals is, as Professor Virchow pointed out, based upon much the same grounds as those upon which in ancient times dissection of human bodies was forbidden, and anatomists were confined to the dissection of dead animals. The feeling of the masses revolts against the dissection of human bodies, and it is well known that the church did not grant permission for it until the beginning of the fourteenth century.

Still another very common topic of conversation among the members of the Congress was the condition of the medical profession in various countries, and this more especially with reference to medical education, and the attitude taken toward this, and the licenses to practice by the state. There seems to be in almost all European countries more or less discontent with the existing state of affairs in this regard. In Great Britain especially is this the case, and a royal commission has been engaged for the past year in collecting evidence with regard to medical education and medical examinations as they are and as they should be throughout the realm.

This, however, is a subject to which it is impossible to do more than allude at present. It merits an article by itself, and this may be given hereafter. With these few specimens of what may be called "The Medical Topics of the Time," we must close. East and west, north and south, over mountains and seas, each to his own place, have scattered the members—and never can again the same men be brought

together; but it is safe to say that there will be other congresses of the same kind, composed to a certain extent of the same elements, and whose work will be strongly influenced by that of the one to which we have referred. Although the great Congress is gone, it is not like a flame blown out, but like a handful of seeds scattered.

JOHN S. BILLINGS.

THE PURSUIT OF ART IN AMERICA.

"TO do our duty," said Sydney Dobell, "is the condition of our existence in this world; to do it beautifully, is the tenure of our entrance into another." This is a poet's statement of the fact that among the primary conditions of civilized man may be reckoned the adjustment of the principles of art to his daily life. If the "pursuit of holiness" proves essential to spiritual advancement, we may with equal warrant avow that the earnest pursuit of art will tend to foster and develop the love of beauty, that external manifestation of an energy which holds a place on the high level of truth and of goodness. Here in America this pursuit has been thus far of a very vague and shifting nature, resulting in crude and unsubstantial achievements, for the temper and attitude of the community have seemed unfavorable, in the main, to that patient and reverent study which the subject demands. Those who have given thought to these things must have been struck by a curious complacency which pervades our country in regard to mental or æsthetic culture. Nowhere, it may be said, is there so general a desire for advancement, for further knowledge, nowhere so assured a reliance upon present ignorance. Under the easy superintendence of those who represent this point of view educational systems have reached a rapid growth, and a civilization which has been defined by somewhat uncomplimentary terms is here for judgment.

More recently, and as opposed to this popular attitude, there has arisen another class who demand with a half pathetic eagerness that in all matters of political and social education we may here avoid the blunders and offenses of the old world. We need to have learned,

they say, what is called the lesson of the past so well that we may gather up and apply these advantageous methods with which the nations have fortified their labors while we leave out and do away with all encumbering waste and extravagance in the ways and means of study or of acquirement. Yet, in actual fact, so potent is the environment, so greatly are we involved in our circumstances, our *locale*, either as a nation or as individuals, that experience is not proved to repeat itself; it is found not to be enough that we see and understand why other peoples in other lands have attained to success or been the slaves of failure, and we are driven back, not to the schools alone, not to succeeding modes of thought, but behind all methods to the abstract principles upon which the education of a people is to rest and of which we are to make anew the application, according to the conditions, the needs, the capacities, not of Romans nor Russians, but of Americans.

At the present time, then, we are beset in the pursuit of art by two dangers: one resulting from the ignorant assumption that we are sure to know what is good and the best way of acquiring it; and the other betraying a readiness to accept as models schemes of education which have proved adequate under circumstances remote and different from our own. It is not difficult to see that there are grave and sufficient causes for the existence of this state of things, and before going further let us recall some of the conditions of our early life as a nation and their bearing upon our topic, even at the risk of repeating what is already known.

There can be no doubt that the first century of American existence gave room for little beyond maintaining the barest necessities of work-a-day life; and the century which followed, wherein we assumed the aspect of a prosperous province, was scarcely better if we remember the privations which all but a very few endured, the absence of enriching associations with the past, together with the many and vexing problems of the present. To take root, not to flower, was the lesson appointed to be learned up to the time of our independence. It is evident as we read the history of this early period that, beside the little accumulations of silver, china and stuffs stored in the closets and buffets of the wealthy, there was almost nothing in provincial life which even suggested the realm of art.

Succeeding this came the multiform aspects of the nineteenth century. At home, and throughout the world almost equally, we find a vital stir, a pressure not only of new ideas but of new things, and, at the moment

when we were crystallizing into more highly organized being, the entrance of applied science into affairs made an incalculable difference. There is no space in a brief summary to consider justly the effect of this new factor; we make only a passing allusion to it in considering the stage of our national life which followed fast upon the rigors and austerities of colonial existence.

This stage it was which proved most conclusively how great and how various were the facilities of the United States—facilities in obtaining the products of the soil, in developing new and abundant resources, in adding to material comfort. All these furnished keen incentives to the spirit of enterprise and ambition. But at this time what was the position of the æsthetic element in the young nation? Hitherto, as has been said, it had only existed in a starved condition, and early in the present century we find it still ignored or directed into unworthy channels.

The Puritan sentiment in New England (and New England at that time struck the keynote of the country's progress) had scarcely loosened its hold upon the customs and manners, the churches and houses of the people, when, coincidentally with freer living, there appeared unlooked-for hindrances to the healthy growth of the principles of art. Haste, superficiality and constant change were all inimical influences, while more directly came, among other practical deterrents, the application of machinery to the industrial arts—an influence the scope of which can hardly be overestimated upon the mass of the population. Opportunity was found to furnish by the new method every article of domestic living at a low price, indeed, but of poor construction and without any reference whatever to standards of good hand work. Such standards, in fact, were regarded rather in the breach than in the observance, even the best native mechanical work being done, as has been cleverly said, on the basis that "originality lay in changing the pattern." Any one who has noted the course of machine labor in the production of household articles finds that there is not only the reduplication to the thousandth and ten thousandth of whatever thing is made—a fact which necessarily destroys interest in the result—but that also the forms of all domestic utensils, of furniture, and of interior decoration in general, have been manufactured, even though models were professedly used, regardless of good design. A period of cheap imitation—when pretension, not fitness, was a prime condition, where show usurped the place of strength, where ornament was degraded from its true station; such a period as this could not fail

to hinder the sound expansion of that instinct in human nature which cries out for the beautiful with him who

> "thought it nobler to be dead—
> To die for Beauty than to live for Bread."

Again, while on one side successful industries were flooding the country with inartistic products, our schools and colleges gave very little heed to formal art teaching, or even to such instruction as might impart to students everywhere broad and substantial suggestions regarding first principles. In short, until within a very short period, this has been an uninstructed people, which, while possessing extraordinary quickness of perception, has, nevertheless, occupied its æsthetic powers in forming, for the most part, very bad taste.

Yet it may be said, on the other hand, that never was there so large nor so varied a field for the exercise of all liberal arts as our civilization presents—a field hitherto left uncultivated, as we claim, but opulent in opportunities for the expression, according to the methods of art, of those great ideal forces which have dominated this new life in a new world.

This is but another way of tracing how closely in a republic the threads of development are bound together; how essential, for example, we find it that æsthetic culture must become general before we can look for any great or representative school of art in America. Many causes contribute to this necessity; the rapid change in the social and political standing of men and women, the quick accumulation of wealth, the complex and stimulating modes of life—all make it essential that the *individual* should be considered as never before in the constitution of a nation. There is no longer the repose nor the picturesqueness of "class" to fall back upon; we have subdivided till we have reached the unit, and to each unit we must look, in art as well as in morals, for the fulfillment of our country's type.

Let it be remembered that in all this we have been considering art education as regards the whole community: The technical instruction of special students is like all other technical instruction; but the *milieu*—the atmosphere so essential to all artists' life—can be provided only by the apprehension and sympathy of those for whom they labor; and while at certain epochs it has sufficed great artists to be sustained and encouraged by kingly patrons, the final appeal for support is to the royal court of the human heart. And as this is true, so also is the converse to be maintained: Only when the people demand the highest things in art, will artists rise to their true level and claim their birth-

right. In the best sense, therefore, we are educating our leaders in art when we are educating their followers.

But, in asking for this enlarged teaching, what demands shall be made? what things are needed for the more successful pursuit of art in America? There would seem to be no doubt that a first requisite lies in introducing into schools throughout the country a well considered system of industrial training. Already it has been discovered that there is a flaw in our public school education. It is said that the children who graduate from its classes betray a partial and unequal development; and the reason is obvious when it is remembered that by the method pursued the training of the mental qualities has been conducted with little reference to moral teaching, while it cannot be long before it is recognized also that a satisfactory scheme of public instruction needs the harmonizing element of æsthetic culture. So far the knowledge of art has not been regarded as essential knowledge. It has been treated as if it were a thing apart, not meant for the open air of the common day; for not yet has it been accepted as an indispensable truth that no one of the great forces which deal with the broad aspects of human life can be narrowly administered; nor yet is it understood that the highway of art is as broad as the world.

But, to return, we give a first place to industrial training, not only because such training leads directly to achievement in the lower arts, but because here first and best can be had that form of education which calls upon eye and hand and mind alike, which awakens or arrests the budding interest which a child takes in form and color, and which teaches the elements, at least, of the laws of relation and of adjustment in regard to visible objects.

It is not necessary to demonstrate what would be the results from a judicious application of these methods. The most obvious of them would be the greater play of individual capacity, the larger chance for the development of skilled labor, together with a more intelligent judgment in matters which relate to mechanical and domestic pursuits. Too much stress cannot be laid upon the practical advantages of good art. Much of the waste and extravagance of the present civilization is due to the ignorance of our community in regard to the first principles of art as applied to common living. There is, indeed, found too often a mock sentiment, styling itself artistic, which has worked great harm in its tawdry vulgarities and fictitious shows—usurping the place of those simple and direct means by which true taste will assert its presence and claim vindication by an appeal to utility on one hand

and to imagination on the other. When this economy of means to ends can be understood universally we shall find that it is not in vain. Taught by just standards, the student who sees that in all beauty fitness is a prime condition, would have no interest in over-wrought or clumsy utensils; he who learns that "nothing can be beautiful which is not true" would be less open to the allurements of unworthy imitations; those who are made to see the intrinsic harmony and freedom of the human structure would be less willing to degrade or deform it; while it may be said all would be more ready to understand and appreciate—let us go a step further, to demand—pure and noble forms in all the departments of art.

The methods of industrial training are too varied to be considered in this brief paper; but it may be said that no one province is of such wide value as that of drawing. To teach how one may represent, even in the simplest way, an object or group of objects is to put into the hand a tool of inestimable value, whatever vocation one may follow. Already it has been found practicable to introduce drawing into the public schools of Massachusetts, and with modifications and improvements this scheme may wisely be followed throughout the country.

The consideration of the first requisite for better knowledge brings us easily to the second, which lies in the establishment, not of large museums alone, but of small collections everywhere—we might almost say in connection with every school—composed of photographs and casts from the best works. On the other side of the water original examples from the great masters serve to stimulate an impulse which is inherited and is fostered in a hundred ways; here their reproductions must represent to the art student almost his sole guide to a right understanding of the principles and practice of his profession. And if these standards be of inestimable value to those who make art their calling, no less will they have a chastening effect upon the many; for the popular mind in this direction, as in others, has a tendency to overrate clever and superficial work, and to make dextrous handling and brilliant *technique* the sole test of merit. In the grave simplicity and depth of meaning which distinguish all enduring art-work lies the best rebuke to the redundant and shallow statements made in varying ways by the half-educated and self-confident men and women of the day; for, if the well-known assertion that "poetry is a criticism of life" be admitted, the claim may be made on equal terms that art shall represent life's concentration, and be among the most powerful of its deepening forces. Taking this claim as a test, the poverty of our

advance in true art development is proved by the lack of character which confronts us everywhere in multifarious forms. The rage for production is not modified and directed by earnestness of search, nor seriousness of purpose—no, nor finally, by that devotion to the ideal which, betrayed equally in Cellini's cup or the Sistine Chapel, is evermore the token of loyal service. Art in alien hands becomes a rogue—terms are used, pictures are painted, effects are produced, to match the fickle desire, the "wayward impulse," of the time. Again, art seems hopelessly involved with pedantry, or is made the tool of charitable intention; bad work is sustained either by pity or by insincerity, and in a thousand ways her needs are hindered.

The same evils naturally are found in current art criticism among us. It has been asserted lately, and with reason, that in no other department of critical testimony would statements so partial be tolerated. Critics find their standards for the most part in popular and personal preferences, or too often allow the skillful handling of tools to usurp the praise which belongs to high intention or original thought. The first function of criticism is to bear witness to the essential element in the work done. To show *how* it is done, the consideration of method, which is the secret of happy expression, this must be second, for method is only valuable as it serves the purpose of supplying the most effective way of conveying the central thought.

We have thus hastily recalled some of the aspects of the pursuit of art in America. We have seen its difficulties, its dangers, its necessities; let us remember also, in closing, its bewilderingly great opportunities. Among the various channels of the art movement, the first and most universal, perhaps, will be in the direction of household art, for the new world gives undreamed of leave to highten domestic culture. Architecture has made rapid strides in all its branches within a very few years, but especially in the direction of houses and interior decorations, and already the change from dull, cold effects to more hospitable tones is seen everywhere. While fortified with broader knowledge, it cannot be long before the quick and growing nature of our people will learn how to apply the principles of "selection and control" in the useful as well as in the fine arts, so that not only custom, but character, may be satisfied. Slowly, but with certainty, it must come to be understood that not to elaborate expression, but to concentrate meaning, is the function of decorative art, and by a curious paradox the use of ornament should be for the sake of brevity and accuracy. The house, so far as may be, must represent the house-

holder, otherwise it shall mean to those who enter it no more than the shop or the street.

But, far beyond all lesser manifestations, we anticipate the widening and deepening of the higher levels of art in just proportion to the rise and progress of greatness in the race. That gods and heroes do not multiply, may be true, but little by little the whole world is to shape itself to God-like stature, and in this great company, with infinite variety of experience, shall be made known sources and springs of beauty as various also.

Since the period of the Renaissance, which flung open wider doors than the classic era had even dimly known, the hopes and aims of men have constituted a new and profound element in painting and sculpture; while with the present century the spirit of the age has sought to express itself in interpreting the aspects of nature, and has called upon earth and sky to bear witness to the endurance, the suffering, the desires of the human soul.

"The conception of the classic epoch," says a well-known French writer, "furnished artists with an admirable and brief subject. By reproducing it incessantly they were incessantly improving the infrequent details; and thus it was that ancient art touched perfection. But we, with less accomplishment and less training, possess more points of view, perceive more ideas, know more; and what we but half guess stretches into an infinitely greater distance. Neither the passions, nor the sentiments, nor the needs, nor the instincts, nor the fears of men are still crouching on the humble level where Plato's philosophy found them; they have all risen, they have all multiplied. This host of winged genii which leads, directs or misguides us, henceforth called legion, this it is which irradiates human faces with expressions and meanings that not Praxiteles nor Phidias could discern. Yet it is beauty, the beauty of an era, not of happiness, but of life; life doubled and redoubled.

"*Un long cri déspérance a traversé la terre;*" and this ardent voice sounds in the ears of the new republic as it has never sounded before in the life of the race, while some of the longings and beliefs to which the cry gives utterance are to be made known only through the supreme achievements of art, which wrings the world's secret from the hand of time and commits it to eternity.

Thus it would seem that the pursuit of art in future generations will not be in vain to those who seek nobly. "Forever," says Emerson, "beauty will come unannounced, springing up between the feet of brave and earnest men."

SARAH W. WHITMAN.

PRACTICAL ELEMENTS OF THE LABOR QUESTION.

THE social scientist regards the labor question as involving all conditions by which the environment of the wage-workers of society may be influenced, and the two expressions, social science and the labor question, become, so far, coequal in their comprehensiveness, while each may have some special features not kindred in their nature or application. The labor reformer, on the other hand, regards the labor question as involving principally his particular panacea for all the ill conditions which grow, or are supposed to grow, out of the relations of employer and employed, and looks upon all other matters and issues as merely sympathetic or subsidiary to the one solution he believes to be embodied in his theory.

To this class belong the agitators whose error generally consists in contemplating results and mistaking them for causes; as, for instance, those who advance the theory that enforced shorter hours of labor will relieve the wage-worker from most of the embarrassments under which he labors, fail to see that shorter hours can only be the result of generally improved conditions, and not the cause—they are the fruits of civilization, not the blossoms from which the fruit grows. These agitators have the same tendencies which Phillips Brooks tells us belong to some preachers—to constantly preach about Christianity, as if it caused Christ. They forget that as civilization advances the labor question, like government, becomes more and more complex, and that what might have been at one period a solution of many difficulties becomes only an element of the general question. Of course, the one vital, technical feature, comprehending the just and equitable distribution of profits, or how labor may be rendered more generally attractive and remunerative, or what organization of labor is required so that all the workers of society may have their proper share in the distribution of profits, has been the foundation or the motive of all the schemes which have been advanced during the century passed for social improvement, and all the pet panaceas have been created with the firm hope of giving a definite answer to the propositions given. These panaceas have varied but little in the essence of their composition for fifty years, and, till within a decade or two, nearly all the discussions upon the labor question have centered

about them. The hours of labor have furnished the material for much debate, and the legislative regulation thereof has constituted the capital of many honest seekers after some practical method by which workers should become greater sharers in the results of machinery. To-day, the fact that England's cotton operatives work but fifty-six and one-half hours per week, while those of the Continent work sixty and sixty-five, and of America from sixty to sixty-five, is staring the producers of Great Britain in the face as one of the causes of their depressed industrial condition. So the question of the hours of labor is fast becoming one of the elements of an international political economy, rather than remaining a matter for local legislative action. Our agitators in this direction have preached a solution of difficulties while failing to comprehend the very essence of the difficulties they have sought to cure; but they are, so far as the hours of labor are concerned, fast abandoning their old position, and now most generally admit that in local State regulation of working time there is very little, if any, amelioration of bad conditions, but, on the contrary, in many cases and in many communities positive injury to industrial interests. They have, however, been largely instrumental in bringing all just men to see that it is an exceedingly poor civilization which does not by its own growth bring with it a decrease in the length of time necessary to secure the means of support. It is a fact substantiated by all research that, as development has shortened the hours of labor, the condition of workers has improved and the value of their wages increased. This will continue to be the direction of growth; its pace will be slow, still commensurate with all advancement, but as a leading element of the labor question the policy of legislating upon the hours of labor belongs to the past, for its place, along with that of the multitude of minor solutions proposed at recurring periods of depression, has given way to the presence of elements which are to some extent absorbing the attention of thinking men in all departments of life, and will more fully absorb the attention, and the minds, too, of the large-hearted and large-brained workers in the cause of humanity.

The statutes of the world voice the progress of labor; in them we can read the advancing steps of industrial interests to a higher and truer plane, as we can the growth of the philanthropy of nations in educational and eleemosynary institutions; the statutes, however, have followed and simply record the better sentiment—they have not caused it.

The elements of the labor question, which the exigencies of the present relegate to the region of dead issues, as well as all the exploded Utopian schemes for the rapid perfecting of the human race, have bequeathed something of value to the world, have left in their decay a richness which fertilizes the growth of the future. As dead matter, animal and vegetable, furnishes the life-giving nourishment which quickens the seed into growth, so the dead failures of the efforts of one age for the improvement of men—the decayed civilizations, even of one epoch—strengthen the growth of a newer and a grander condition, a brighter and a higher civilization.

Political economy has been more remiss in its duties to the labor question than the agitators have been faulty in their proposed solutions. The political economists of the old school have failed, and it would seem wilfully neglected, to consider the ethical bearings of their science and the very conditions which must exist on the part of the employed before any very satisfactory prosperity can come to individuals or nations. They have failed to teach the cosmopolitan nature of the questions which enter into the discussion of the laws of the acquisition of wealth, and they have also failed to see that the true wealth of a people depends as much, if not more, upon the right use of property as upon its rapid accumulation. They have invariably put the question "Will it pay?" at the sacrifice of the nobler proposition, "Is it right?" By this course they have alienated the workingmen, and have so jeopardized the very existence of their science, once warm, now cold-blooded, that a new school of political economists are finding a place in the world of thought and a larger space in the hearts of the lovers of humanity. The new school of political economists will have to deal with the elements of the labor question of to-day and the near future, and they will be the ripened fruit of the seed planted by all the agitators and writers from William Godwin to Karl Marx, and they will absorb the better elements of the labor parties; they will meet the socialists face to face and formulate all that is good in socialism, and quietly, yet positively, consign its weaknesses to the rubbish pile, which already holds so many; it will give a healthy tone to industrial society, which really gives tone to all society; it will stimulate statesmen and politicians to grand efforts in legislation based upon the comity of nations, not the destruction of peoples, and it will cause the regulation of commerce upon ethical and equitable conditions, which shall in time establish an international interest on the ruins of selfish and destructive national policy which

seeks industrial success at the expense of others' distress. There can be no rational prosperity in a land whose people depend upon the distress of the people of other lands. The war between nations which creates a demand for our products is a financial and commercial boomerang always, and the sooner this truth sinks into the minds of men who are accustomed to shape public sentiment the better for the welfare of the world, and the political economy which fails in the future to build its structure upon the bases stated will find itself upon a foundation of sand. Humanity and the conduct of governmental affairs, as well as all industrial and commercial relations upon an ethical basis, must and will constitute the creed of the political forces that will rule in the future.

In this light, what are the elements of the labor question, as shown by investigation either to exist or to be coming into existence, as important factors in future considerations. The return of prosperity is regarded by many as removing in great degree various problems belonging to the realms of the labor question from the list of topics demanding serious attention at present; on the contrary, however, prosperity should inspire a more thorough examination of every phase of such problems, and we should learn from adversity the means to be adopted to avoid the repetition of unfavorable conditions. When depressed times prevail the quacks of political economy have the majority over the philosophic believers in the science, and are ever ready with remedies. During prosperous periods we should earnestly consider means for the prevention of evils; and, again, prosperity brings its dangers, which social and political economy should teach us to avoid. The worst oppressors of labor, certainly those who cause the greatest actual distress, are those self-constituted reformers who insist upon doing the workingman's thinking, and during prevailing distress these men secure by glittering descriptions of benefits to accrue from the adoption of their ideas a certain following which sound sense is powerless to turn aside. The prosperous period restores men to their normal mental condition, and enables them to consider calmly the relations of life surrounding them.

The workingmen of this country are perfectly competent to manage their own intellects and to weigh propositions and form conclusions; they can comprehend a philosophy or detect a fallacy, and they know well what constitutes the truest elements of the labor question. This body of men claim the right to educate their children; they believe that in education is to be found the leading, in fact the supreme,

factor in any plan for the progress of their kind. That practical education which enables the young to mark out for themselves a line of study and reading for self-culture and for work forms the real, underlying basis of the questions under discussion. It may be that in our endeavor to reach perfect democracy in our educational system we have gone too far, and have weakened the growing generations rather than strengthened them for the actual service of life. It is true that the political education of the young has been neglected, and it is certainly true that upon such education depends in a great measure the success of our own governmental experiment. That every child should understand the composition of the state and national governments, as well as the nature of the elementary principles of the constitution, sufficiently to comprehend the functions of the chief officers under the constitution, is of the greatest importance, for the beliefs of the many, whether sound or unsound, of moral or immoral tendencies, are sure to be reflected sooner or later in the action of legislatures. The grandeur of educational facilities in the United States has too often furnished the topic for learned writers to be introduced here; but what is insisted upon as the first element in the labor question is the necessity of fitting all youths to be independent thinkers upon the matters which are constantly coming before them, and on which, directly or indirectly, they serve as the final board of examination. No one need fear this political education will make our people a nation of politicians in the vulgar meaning of the word; on the contrary, it will include instruction in all the lines of study bearing upon health, morals, social economy, industrial art, and it is to be hoped political and domestic economy; these are not only the essentials in the education of the workers of the land for their own immediate welfare, but they are the positive essentials in that progressive movement, dawning upon us, which shall insure peace, harmony, and material prosperity in the industrial undertakings of the future. With such a curriculum established, many studies now occupying much time, and leading to great expense, become clearly non-essentials; but they need not be displaced, for the producers of society, who are the taxpayers of society, will not object to the complete equipment of our schools, in which they not only take just pride, but so largely participate. The point aimed at should be to give the majority, which drops out before reaching the higher schools, as a rule, not a smattering of what might be gained by a full course, but something full, satisfactory, and valuable for future use. As the elements of the labor question become

more clearly developed, the character and scope of the education of the masses will be more clearly understood. The renown of America's schools, so great already as to command the warm approbation of the advanced educators of the world, and to incite the fierce opposition of ultramontanists everywhere, can and will acquire newer and brighter luster when the schools make of our artisans artists, of our workingmen artisans, and of our common laborers the educated conservators of the public weal. Invention will greatly stimulate this education, for its tendencies are to take muscular labor out of competition with mechanical forces, and give to the common laborer the control and superintendence of the powers they now look upon as their enemies; under it they will be capable of defining and applying all those subtle distinctions which separate the use and the abuse of the results of inventive genius, and enable them to reap a greater reward from the combination of the constituents of productive energy than has heretofore been their lot.

Sanitary science, including every means which can be adopted to secure the health of operatives, will hold a place in the labor question, almost, if not quite, unapproached till recently. Political science in its application has not sufficiently embraced the elementary conditions of individual physical development as prerequisites to sound and permanent governments. If the health of each generation of workers finds a successive degeneration, hopes for the stability of institutions must grow correspondingly weak. It is unreasonable to expect a body of people whose blood is fed, or rather poisoned, with vitiated oxygen, to possess the mental calibre to enable them to reason with any correctness upon even the ordinary topics which should engage the serious attention of all citizens, and especially of those whose personal welfare is most largely at stake. If, as Napoleon once said, the seat of revolutions is the belly, it is equally true that the seat of mental responsibility, always granting the existence of sufficient brain power to facilitate thought, is in the blood. If the digestive organs must be kept occupied to a normal degree in order to secure the freedom of a community from personal violence, how essential that, in addition to physical food taken into the stomach, there should be received into the lungs the vital elements essential to purify the blood. Solids can be of but little use without the necessary power of the blood. Bad sanitary conditions lead to so much imbecility in one generation that the danger extends to those coming up to take its place. Statesmen, in their endeavors to secure political advantages to their country, too

often fail to discover that the governments they administer can secure through sanitary regulations the highest order of supporters. Agitators do not find in this question so much matter for popular demonstration among the operative masses as they do in the more superficial topics which give them occupation. The value of an hour a day taken from the working time of men and women surrounded with bad sanitary conditions is nothing whatever in comparison with good sanitary conditions without the added hour of leisure. Bad drainage, bad ventilation, unclean streets, constitute topics for the most earnest discussion, and are attracting the attention of legislators; and when the working people themselves become aroused to the importance of demanding purer conditions, the necessary laws will follow, if, indeed, they are needed. No corporation has fairly realized the essentials to industrial prosperity whose management cannot or does not appreciate the positive necessity of the healthiest surroundings. Social scientists, indeed, are doing much to promote reform in the direction indicated, but education in sanitary matters is needed among the workers themselves; it should become one of the vital elements of the labor question, yet the labor reform platforms are rare, if not absolutely unknown until recently, that have embodied a plank calling for sanitary regulation. The State can and should open the door of every home, whether private residence or crowded tenement, and insist upon the purification of every poisonous influence. There can be no question as to the constitutional right of the people to enact all requisite sanitary laws, and of such a character that the object sought to be reached can be reached effectually. Legislators are very ready to provide that one man shall not injure another; why can they not be as ready to insist by statute that a man shall not injure himself? If a man gives me that which makes me a terror to my family, in some of our States the law holds him responsible. Why should it not hold one responsible for taking the same course as to himself? It is too late, after the State has said no man shall establish a nuisance to the injury of his neighbors, that all children shall attend school, or that this person may vote and that one shall not, or has said the many things in form of law which regulate private business and protect public convenience—it is too late, after these things, to say the State cannot step in and relieve any portion of its people, especially its children, or enact laws to improve them mentally, morally, socially and physically, and improvement in this direction may be secured more largely through wise sanitary education than by any other means. If it is not the plain duty of a State to see

to it most earnestly that the young have an opportunity to grow up under such conditions of cleanliness as to secure better mental and moral responsibility, there can be no reason why she should be much concerned for them after they have arrived at maturity. Economy demands, and surely the very best interests of the workers of society demand, that the cheapest methods be adopted, and that means that the early age is the most favorable in which to lay the foundation for strong bodies and sound minds. The proper care in this direction would render unnecessary the costly edifices we now build as homes for the insane, the criminal, and the defective of all grades. Under a code of efficient sanitary laws, which can only come as the result of education in the elements of sanitary science, intemperance will lose half its terrors, and relieve society of half its terrible results. Bad air and the poison which comes from filth of any kind as surely leads to a desire for alcohol as absence of food leads a man to eat. Society has no right to place any obstacles in the way of free beer and free rum, so long as it criminally allows individuals to breathe in the very ingredients which stimulate their want. As well might the surgeon complain of the flow of blood from the severed artery while he persistently held it open. Such a surgeon is a fool, and any legislature which attempts to stop rum drinking, and yet allows the rum drinker to constantly feed himself on the most voracious appetizer for rum, is a body of such surgeons. With the appetizer for rum removed, or to a great degree checked, by wholesome sanitary regulations and practices, the employers of labor have it in their hands to kill rum drinking at short notice by refusing to employ men given to it. Already many concerns in this country are bringing their people to understand that in sobriety is to be found the surest means to happiness. Instances could be given when corporations say to their employés, you can work here so long as you are sober. If you fall we will still give you a trial and a chance to right yourself; we will help you up; but, if you continue, you must seek some other employment. In these instances the rule is having the best possible effect. It is teaching the men the road to take to manhood, and it is also teaching them that, with the exercise of the same care which employers give to the economies of their business, the employé can place himself in a condition to meet the adversities of business.

There should be but two classes in society—sober men and paupers.

Sanitary conditions prevent much of the intemperance of crowded factory towns. The removal of intemperance induces frugal habits,

and frugal habits prevent strikes; and the industrial enterprises where these conditions have been secured have in all instances paid the largest dividend to invested capital, secured the largest division of profits to the workers, and given the least employment to the executors of law.

With the thorough understanding of the potency of an education in sanitary matters as one of the most prominent elements of the labor question, there would naturally follow a vigorous demand for the exclusion of children from the workshop. Here the labor reformer has done noble service in the dearest cause of humanity. The good results to children surrounded by the best sanitary conditions at home are lost in a great measure by the evil consequences arising from their employment at too early an age. It cannot be denied that one of the effects of modern thought and education is too often the desire to secure a living with as little positive exertion as possible, and that this results as much from exempting children from work as from almost any one cause. It is probably unwise, therefore, to allow children to become accustomed to the idea of living upon the earnings of their parents after a proper age; yet this truth does not stand in the way of the proposition to exclude all children under fourteen, or say sixteen, years of age from constant service in mills and stores. Many States have already passed laws regulating this matter, but too few have taken the pains to thoroughly execute such laws. The workingman, first of all, should demand the exclusion of such children, for their very presence in the factory tends to decrease his wages, and this is true to such extent, as investigation proves, that child labor is now necessary in a large proportion of operative families to secure support for the family. This is all wrong, and all agitation, all investigations that will lead to a public sentiment sufficiently strong to take child labor out of the factories of the world—in fact, to strike the term itself from the language—are instruments, almost God given, in their mission to humanity for the building up of the race.

Bad as child labor is, it is comparatively harmless beside the baneful effects of the employment of married women in textile works; a most harmful wrong, and yet the most difficult to reach. Socialists are usually far in advance of labor reformers in their demands upon this point, as in the matter of the sanitary inspection of all conditions of labor, means of subsistence and dwellings included, but with them even it is a subordinate element, while to the truest lover of his race it is one touching the very character of the growing generations. If

such an expression would not be considered as bordering upon the insane, we should say, not only from a physiological point of view, but from an ethico-economic stand, married women ought not to be tolerated in mills at all. No ten-hour law can apply to women's work, which never ceases. It is not too much to hope that vital science will one day demand their exclusion, for the civilization which has not brought with it the elevation of women has hardly been entitled to the name. Her position is vastly better than of old, but she has not reached her equality with man until the life dangers she passes through in giving the world its soldiers, its men in all hazardous callings, shall be her equivalent to their danger, and shall consecrate her to a holier life of usefulness than can be found in an occupation which subjects her life danger to a worse brutality than often falls to the lot of men. We thank Dr. Azel Ames, Jr., the author of "Sex in Industry," for a recent suggestion, personally made, that the statistics of deaths in child-birth would place woman, so far as the courageous sacrifice of life for humanity is concerned, on a grand equality with man for all his glorious sacrifices of life in the battles for humanity. The study of this question proves that it is not rare for married women to remain at the loom till a few days before confinement, and, what is still more wicked, to be found at their posts in so short a time afterward that not only is decency shocked and outraged, but crime to the offspring is committed. Not the slightest evil effect of such employment is the loss of respect, not for women alone, but for motherhood itself. How easily might it be shown that such loss of respect has in history often led to the moral decline of the nation and its sure resultant—the stagnation of its industries. We commend the admirable work of Le Play, entitled the "Organization of Labor," to all who see any prosperity, industrial, moral or social, for that state which neglects the practical ethics growing out of an adherence to the best labor platform ever constructed—the decalogue. When the workers of society so far depart from the principles of this platform as to lose respect for women and for motherhood, the chivalry of the race will take on features which will not include the protection and defense of the noblest of human kind. Perhaps no regulation can be established which will reach the evil we are contending against, for it is an evil that is sapping the life of our operative population, and must sooner or later be regulated, or, more probably, stopped. It is a difficult subject to treat, so many obstacles come up, so many seemingly insurmountable barriers, so much that appears to smack of sentimentalism, but still speaks to

one's highest appreciation of real justice, and equity and mercy, and to one's sympathy for the helpless who now must be raised in such a way as to entail constant expense, when by proper treatment and deprivation from immediate earnings, comfort and strength for old age would be secured It is a knotty point, and one which must demand the attention of philanthropists and large-hearted law-makers, as it already has of mill-owners themselves, and which will call for serious consideration. As an important element in the labor question, it has been subordinated to the desire to establish more noisy reforms.

As yet the labor question has not included any planks in its platforms relating to crime and its presence as a most serious factor in the problems sought to be solved. It has been deemed of importance to agitate the abolition or limitation of labor in penal institutions, forgetting that it is far more important to lessen the number of convicts than to be troubled about the work they may do. If there is a body of men who should be concerned about the expense crime entails upon taxpayers it is the body of wage-receivers. There are in the state prisons of the United States thirty thousand convicts, and in the minor penal institutions as many more. Fifty per cent. of all are under twenty-six years of age. A large majority are criminals by accident, but the penal institution settles them into positive criminals. The best interests of workingmen would be subserved if they would demand of the state some better method of caring for this large number of morally sick members of the community, and at the same time demand some more rigorous punishment for a class of crimes that neither entitle the criminal to consideration beyond subsistence and healthful surroundings nor freedom from personal castigation. The future will insist upon making crime absolutely unprofitable, surely and swiftly a losing game, while it will consider the unfortunate and morally defective class proper subjects for a method of treatment which shall not be penal in its nature. The competition which comes from the labor of convicts bears no reasonable relation to the injury resulting from the expense and presence of crime. The reduction of crime and the alleviation of poverty are results all men of whatever party can unite in securing. In the adjustment of wages these elements are most potent, for the value of wages or profits can only be estimated by a multitude of coexisting conditions, certainly not by the dollars and cents measure, and most assuredly poverty and crime cannot be reduced to the minimum while bad conditions of any description attend the people. The very presence of these twin evils

corrupts the beholders and inflates the expense of all living. Socialist and labor reform platforms are mysteriously silent upon this topic, and in all their fiery arraignments of society they have the faculty of dealing only with such features as can be readily worked into political capital. If they would put half the invective used against capital into a crusade against crime, the fruits of their labors would be seen growing out into enhanced values, safer surroundings, purer and happier homes.

The social life of workingmen constitutes an element productive of most interesting and valuable study in connection with the consideration of causes which lead to increased city population. Society may find it necessary, in order to check the stream of people constantly flowing into over-crowded cities, to provide more adequate means for the social improvement, recreation, amusement and entertainment of the mechanics and laborers of country towns. Man seeks society; will society seek man and endeavor to hold him in localities free from the evil influence of cities, yet supplied with all the healthful adjuncts which in so large a degree attract him to manufacturing centres? Public halls, free debates, institutes for scientific and literary lectures, rational entertainment for tired men, music and all its mellowing influences, all at the expense of society for society's benefit, are among the general possibilities the true elements of the labor question recognize as desirable of accomplishment.

Among the practical elements of the labor question are to be found the laws relating to credit. If there is any one thing which affects the price of living more than another outside of the subtle influences arising from demand and supply it is the pernicious effects of the credit system. Probably as nearly as to any single cause the initiation of periods of industrial distress can be traced to this. The evil finds its way into the dealings between employers and employed—is the feature of the baneful truck system of payment which prevails in greater or less degree in many, if not all, the States in the Union; it increases all prices more than the price of labor; it causes extravagance in public and private ways; it leads to luxury, and luxury leads to moral decline, for it not only saps the virtue and the integrity of those who indulge in it by compelling them to secure the means for its gratification at all hazards, but it corrupts the fidelity of those who witness it, and weakens their moral responsibility in all their engagements. Some day, at the demand of all engaged in the production of essentials to comfort, health and true refinement, the business men

of all classes will learn not simply to rely upon honor as the sole lien upon the debtor, but will ask to have the processes by which to enforce claims greatly abridged, if not wholly relegated to the realms of obsolete methods. In any case, the best material and moral interests of our workingmen can be greatly enhanced by strong and logical agitation against the continuance of so vicious a system. The expansion of personal credits is only equaled in mischievous results by the expansion of public credit. This opens, of course, the whole currency question, which constitutes a prominent element in the discussion of the labor question, but belongs in its very nature without the design of this article, which comprehends those elements only which pertain to the practical work of life, and which can be seized upon and made effective in right directions by discussion and agitation, and such as can be handled by society whenever its spirit is willing.

The points to which attention has been called are usually ignored by political economists in weighing the means for securing that material prosperity, the accomplishment of which constitutes the chief objective of that grand science, and by the reformer whose main endeavor is to secure a larger share of the results of labor. We have had no intention of including among these elements the features belonging chiefly or in part to the province of speculation; they have been ignored as not constituting true practical elements. To extend this paper to a discussion of such elements would involve the treatment of productive coöperation, socialism, the machinery question, the influence of the supply of the precious metals, food, etc., the ruling influence of the cost of support of field hands in cotton-growing States, the transportation question, and the full discussion of the tariff question. All these are elements in any free consideration of the labor question; but, as has been stated, they are not of that grade which admits of practical handling by society. These elements, given as belonging to the practical work of this and the next generations, have been treated as such because investigation has developed the fact of their importance as prominent factors in the industrial enterprises of to-day, and because study has shown that in the past the economists and the agitators have failed, as a rule, not only to consider them, but to include them in their estimates of the vital conditions essential to insure the highest industrial prosperity. Of course, socialists, moralists, and theologians of all classes are unanimous in locating the existing evils, whatever they may be, upon the foundation weakness of human nature, selfishness; but the grand fallacy of the socialist has

been and is that he expects to eradicate selfishness by working upon the aggregate of society, while the only way to purify the aggregate is to develop the individual. This fallacy belongs also to the system of coöperation as applied to production. Nor has it been sufficiently recognized yet that the true position of the labor question is an international one, and as such must be based on those principles which will in their application bring about the best condition morally and physically—almost the same thing—of the workingmen of nations dealing with each other. It is an individual matter with all engaged in productive industry. All that has been said, of course, applies to all walks in life—to establish the absolute principles of the decalogue and the golden rule as the only effective platforms. It is a mere truism, so apparent that it hardly need be stated, that the growth from individual self-seeking to a realizing sense of public duty, from self-love to love of the race, from the constant and ever narrowing pursuit of one's own interest at the expense and injury of all others, up to a recognition of the fact that the welfare and the happiness and the prosperity of all implies the prosperity and contentment of every individual in all the nations. There can be no harmony of the whole with inharmonious parts. Political economists and agitators have failed in teaching the cosmopolitan character of the labor question in their zeal to establish the success of individual communities.

Religion is, of course—and this is the conclusion of life-long reformers who have successively passed through the enthusiasms of different schemes—religion is the highest force in the solution of social problems, but it brings with it practical endeavor to realize the work suggested, for with head and heart only it can do but little; with arms, legs and feet obedient to the desire of the heart and the will of the head it can work out the hardest social problems, which unfortunately it has left too much to socialists not only to formulate, but for which to suggest the solution.

CARROLL D. WRIGHT.

DEAR FOOD.

IN a sermon delivered on the day appointed for a national Thanksgiving a well-known minister is reported to have said:

> Let us see whether God is starving us out. The corn crop this year is 1,276,132,900 bushels, valued at $867,770,372 at the seaboard. This crop is worth $267,000,000 more than that of last year. What if the crop is less in amount—it is more valuable. Is not a bushel of corn worth one dollar as valuable as two bushels at fifty cents each?

The natural inference is that the price (which is but an accident of value) of corn is a matter of small moment; and that if the price of food rises or falls slightly it is all the same; the moral and social condition of the people will undergo little or no alteration. If the principle that a bushel of corn worth one dollar is as valuable as two bushels at fifty cents each, why can it not be extended? Why, under such reasoning, would not one bushel at three dollars be just as valuable as six bushels at fifty cents, or, to take a very extreme case, why would not one bushel at $867,770,372 be just as valuable as 1,276,132,900 bushels? Undoubtedly, so far as regards the mere purchasing power, the value of the wheat in either case will be the same; but there are many and important results, both social and moral, which accompany even a slight increase in the price of food and make it preferable to have two bushels of wheat at fifty cents, instead of one bushel at one dollar. In short, it is best to have food as plentiful and as cheap as possible, provided also it may be of a high quality. High prices never have indicated and never will indicate prosperity.

The effect upon the animal body of an insufficient amount of food is too well known to require any extended notice. The waste of the body cannot be repaired, the necessary functions of the body are not performed, and if the deficiency continues for a length of time inanition and death ensue. But what constitutes the requisite quantity or quality of food required by man depends upon many circumstances, such as occupation, habits, climate, age and sex. A man may exist in inaction on a scale of food supply which would be followed by death were he put to any exertion. The quantity of food required in a warm climate is much less and of a very different quality than that which is called for in a cold climate, for a much smaller proportion is required to preserve the animal heat of the body. While a laborer in the

Spanish vineyards consumes daily between eight and nine pounds of vegetable food, an Esquimaux will eat twenty pounds of animal food a day. A relatively larger quantity of food is required by a young, active and growing body than by one in which the parts are fully developed; and a man requires more food, both relatively and absolutely, than a woman, because his vital processes are more active. Thus, it cannot be said that a definite quantity of food of a certain composition is absolutely required by the animal frame, because this is largely dependent upon circumstances, and the various computations to determine this are more curious and interesting than exact, and are of a greater value to the chemist and physicist than to the economist. But let the body be stinted of its food for a single day, and some effect will be felt. The body is rendered more subject to disease, and it has been amply demonstrated that there is an intimate connection between scarcity and pestilence, between bad seasons and epizooty; and there is a tendency which arises among a population deprived by some circumstances of its full supply of food to contract the so-called zymotic diseases, as typhus and malarial fevers, and dysentery.

From an economic standpoint there is no difference between a real scarcity of food and high-priced food, and the one is usually accompanied by the other. Every increase in the price of a commodity at once acts upon the number of consumers, and as the price rises the number of consumers falls. In the case of luxuries this result would not be prejudicial to the population at large, although the manufacture or growth of the commodity affected might be discouraged. But, if there is a real scarcity of an article of prime necessity to life, the result will be more widespread and will act injuriously, for the consumer will pinch and deny himself in other ways to be able to obtain what is necessary to his existence. So that with every rise in the price of necessary articles of food a portion of the population, and it is that portion which is least able to give up any of its expenditure, is driven to an insufficient or a lower and meaner diet, and this may result in injury to the health and laboring capacity of the population. An underfed laborer is always an indifferent worker; and, when it is considered that the laborer constitutes by far the greater portion of every society, it may be readily seen how general must be the effects produced by any increase in the cost of living. Whether this results from a failure of crops, legislative interference, speculation or currency experiments, the effects will invariably be first felt by the lower and poorer classes of society.

M. Messance, a French writer on population, from a careful study of the statistics of France, concludes that those years in which corn has sold at the highest price have also been those in which mortality was greatest and disease most prevalent; and that those, on the contrary, in which corn has been cheapest, have been the healthiest and least mortal. Nor do these results hold good for France alone. Take, for instance, an example from England. The harvests of 1799 and 1800 were deficient, and in the following years there resulted great distress among the poorer population. There is no better evidence of this distress than the record of the burials in those years, as given in the report of a Parliamentary committee to discover means of relieving the people:

Year.	*Price of wheat per quarter.* s.	d.	*Burials.*
1799	75	8	189,586
1800	127		208,063
1801	128	6	204,434
1802	69	3	199,889

And the result is still more startling when the number of births and burials are compared. In 1801, a year of scarcity, the number of births in England and Wales was 237,000, and the burials, as above, 204,434; while, in 1804, a year of plenty, the births ran up to 294,000, while the number of burials fell to 181,000, although in the three years the population had increased. In 1867 Dr. Stark, the Registrar-General for Scotland, in his report wrote: "In countries where the mass of the population is dependent for their sustenance on the crops which they raise, and where they have little or no external trade, it is the crops which are the great regulators of the mortality, after the weather. For, if the crops partially or wholly fail, the price of the food rises so high as to be beyond the power of purchasing by the lower classes. In such countries, therefore, the amount of sickness and death almost invariably rises and falls with the price of provisions. When provisions are abundant, and consequently cheap, the amount of sickness is small and the death rate low; but a failure of the crops almost invariably brings a high amount of sickness, and the death rate becomes excessive." And a very slight increase or decrease in the cost of living may produce results apparently out of all proportion to the cause. Dr. Farr, in his Statistical Abstracts, shows that the death rate of the population of England falls three per cent. for each decrease of two shillings in the price of wheat. Again, there is a close connection between the price of wheat and the number of marriages among a

population, and particularly among the poorer classes. So that, from a physiological point of view, dear food is an evil.

But there are also results which we must turn to Europe to see in their full force. The immediate consequence of any marked deficiency of food is an increased emigration from the affected districts into more favored parts. Such a calamity as the Irish famine of 1846 led to one of the most remarkable removals of persons from one hemisphere to another in modern times, and resulted in the almost total depopulation, so far as regarded effective labor, of entire counties. But it is not necessary to depend upon such extreme cases for illustration, for every rise in wheat is reflected in the emigration. This cause, however, must not be too much insisted upon. In recent periods it is an undoubted fact that emigration proceeds more spontaneously and functionally, and is less dependent upon violent forces, than in past times. But the apparent coincidence of increased emigration with increased cost of living is too marked to be neglected. Still, the price of food is only one of many causes.

It is difficult to realize how rapidly emigration has developed within a comparatively recent period. England, in the year 1815, sent out only 2,081 emigrants; but under the pressure of the European wars the number rose in the following year to 12,510, and in 1817 to 20,634. There was a regular and small increase until 1847, when it suddenly rose. While in only three years during the long interval between 1815 and 1842 had the annual emigration risen to or exceeded 100,000, in 1847, the year after the Irish famine, it rose to 258,270, and this increase has been sustained, with a few exceptional years, down to the present time; and it may be shown that the fluctuations in the number of emigrants from year to year has closely coincided with the fluctuations in the price of wheat, this being taken as the staple food of the people, and its price regarded as a measure of the cost of living. But, again, the reader must be warned against attributing the increase in emigration wholly to the price of food, for there are other factors in the problem. Dr. Weisz thus summarizes the results of his investigations with regard to English emigration by decades, arranging the totals of years in which wheat was cheap, of medium price, and dear:

Decade.	*Cheap.*	*Medium.*	*Dear.*
1821–30	18,425	24,998	29,255
1831–40	64,661	87,587	67,333
1841–50	290,173	119,868	168,403
1851–60	234,783	223,760	225,597
1861–70	230,584	204,882	151,315

It will be seen that, though the principle that emigration is influenced by the price of food holds good for the first two decades, a different result is shown in the last three. But in these years there were other forces in operation which tended to conceal the influence exerted by an increased cost of living. The discovery of the gold mines in California and Australia, the political reaction following the attempted European revolutions of 1848, the results of the adoption of the principles of Free Trade by England, and the Rebellion in this country, are factors the influence of which it would be impossible to overlook. But, if particular years be compared, it is plain, that the price of food was an active cause of emigration.

Years.	*Price of wheat per quarter.* £.	s.	p.		*Emigration.*
1817–20	3	10	1	(aver.)	108,937
1821–24	2	16	1	"	69,301
1847	3	19	9		258,270
1854–56	3	12	1	"	676,780
1857–59	2	8	1	"	447,279

The emigration was not confined to Great Britain alone. It was European, and notably in the North of Europe among the German and Scandinavian nations. In Belgium, in the decade 1841–50, the average number of emigrants for four years in which wheat was cheap was 5,180; but the average for two years in which wheat was dear was 5,266; in the following decade, four cheap years gave an average of 7,588 emigrants, and three dear years an average of 10,267. But in the decade from 1861–70 there was some cause that produced a contrary result; for four cheap years the average was 10,635, and for three dear years, 9,938.

In Prussia the effect is still more marked. In the six years, 1845–50 (inclusive), the average number of emigrants for four years in which wheat was low in price was 8,458, and for the two years in which wheat was high in price, 15,784; and in the following decade (1851–60) the averages were, for six cheap years, 18,868, and three dear years 25,638. Owing to the changes that have taken place in the territory of Prussia since 1860, the results for the years between 1860 and 1870 can not furnish any means of comparison with the former years. But a very recent movement in German emigration has occurred which deserves attention, and which is clearly attributable to the social condition of the people.

The year 1873 marked the beginning of one of the longest and most severe financial and commercial crises ever experienced, and it is

specially notable because its influence was not confined to one country, but the whole civilized world. It followed, too, a year of apparently great prosperity. The effect on emigration from Germany was at once very marked. The number of emigrants from Würtemberg between the years 1871 and 1879 amounted to 23,093 persons, of whom 14,801 crossed the ocean in the first three years of this period, leaving but 8,292 persons as the emigration of the remaining six years. Thus, while the average of the first three years, two of which were years of great commercial activity, was 4,933, from 1874 to 1879, during which the depression was becoming more burdensome and widespread, the average annual emigration was only 1,382. It would be natural to suppose, looking only at the German figures, that emigration should have increased during this time and not have decreased; but, so long as the depression was general and affected all the countries to an equal degree, there was nothing to be gained by a change of home.

To what a degree immigration from Europe into this country was influenced by "hard times" is shown by the returns of the Bureau of Statistics:

1872	351,265	1876	120,103
1873	396,380	1877	105,092
1874	261,232	1878	100,832
1875	181,635	1879	133,070

The first dawn of prosperity appeared in this country in 1879, while the condition of Europe was rendered more miserable by a general deficiency of crops. The condition of the agricultural and laboring population was miserable to an extreme, and the cities were crowded with a desperate population which was barely able to obtain sufficient to sustain life. With the year 1880, as soon as it was seen that the appearances of prosperity in this country were real, that trade and manufactures were reviving, and that it was easier to gain a living in America than in Europe, the tide of German emigration swelled to enormous proportions. During the first six months of that year 4,617 emigrants left the kingdom of Würtemburg alone, being at the rate of 9,000 per year, or of an annual emigration of 4.8 persons for every thousand of the population, against an average annual emigration of 1,382 for the six years previous. And by far the largest proportion of this number, about eighty-seven per cent., has been drawn from the rural population, not only laborers, but in many instances proprietors, who were in by no means unfavorable pecuniary circumstances. The small remainder was drawn from the overcrowded cities where the

unemployed and criminal classes abound. Consul Grinnell, writing from Bremen in April, 1880, says that "the emigrants this year are, without exception, of the best agricultural and industrial classes, taking money with them, the savings of years, the proceeds of their tenements sold here. My own inquiry and observation confirm the truth of the statements of the German journals that Germany has never before lost such numbers of worthy and industrious people as are this year emigrating to the United States, and that the loss to the German Empire can scarcely be over-estimated." The full returns of emigration from Germany for the year 1880 showed a total of 106,190 persons, and the high average was fully maintained during the first six months of 1881.

The major cause of this great increase in the emigration in the years 1879 and 1880, an increase of 300 per cent., according to the report of the Imperial Commissioner of Emigration, was undoubtedly the difficulty of maintaining life in Germany, as compared to the comparative ease in the United States. The grape and grain crops had proved failures for the three years preceding 1879, and the cost of living had largely increased, while wages had remained stationary, or even decreased, as in the case of the wages of the agricultural laborers and industrial workmen, which were lower in 1880 than they had been for some time. Nor were the climate and crops wholly to blame. The protective policy of Bismarck not only increased the difficulties of the situation, but did not afford the relief to trade and manufactures that he had confidently predicted would follow the adoption of his policy. The annual report of one of the oldest trade associations in Berlin describes many branches of industry in Germany as hampered by the rise in import duties. The home market suffers through the increased prices of commodities, and consumption is checked by increased taxes and higher prices of articles of food, while the export trade is injured through the increased cost of raw materials and half-manufactured articles which enter largely into production. Added to these are the burdensome taxation for military expenditure and the enforced military service.

We may, then, accept Danson's proposition that "the variations of the stream of emigration will be found to coincide nearly with the fluctuations in the prosperity of small capitalists and the ruder class of laborers in the countries from which the emigration proceeds," and in estimating this prosperity the cost of food is an important factor.

But in thus dealing of the effects of dear food, we have till now been

occupied rather with the effects on the body's health and on the social status of man. There are other results to the mental and moral natures of man which flow from an increased cost of living, though this matter has been but little noticed. The ordinary mental changes attending starvation are thus described by Müeller: "They are feelings of general debility, actual and gradually increasing loss of strength, fever, delirium and violent passions, alternating with the deepest despondency." But, again, it is not necessary to take such an extreme instance as actual starvation. For even a slight increase in the price of the prime necessaries of life will produce in time some changes in the mental and moral condition of man, though the exact relation has never been determined. There can be no doubt that poverty and underfeeding are powerful agents in the production of some varieties of insanity. Imperfect nutrition is one of the most frequent causes of insanity and imbecility among the poor, and it is in the lower classes—those classes that are dependent upon their wages, and lead a hand-to-mouth existence—that the larger number of insane are found. But, while the statistics of all European nations clearly show the powerful affinity that exists between poverty and mental disease, there has never been any attempt to show that there is any relation between the price of wheat and the number of insane, although such a relation undoubtedly exists. The great difficulty in establishing such a relation is in the time which must elapse between the cause and the effect. While the effects of an increase in the price of food upon the bodily or social condition of man are either immediate or appear after a short period of time, the effects upon the mind and morals of man require a longer and more continued action.

Morselli, in his recent work on suicide, shows that there is a large increase in the number of suicides in years of agricultural crises, which are followed by distress and misery, and an increased struggle for existence:

> The two years 1860–61, distinguished by high prices in western and middle Europe, showed a remarkable increase of suicides in France, Belgium, Würtemburg, England, Austria, Sweden and Hanover. The same was observed in the years following the war of 1870–71, in Germany, which, instead of being enriched by victory, has, on the contrary, been impoverished. The crisis on the Exchange, in 1873–74, produced in Austria an unforeseen leap from 1,800 suicides annually to 2,200, and even to 2,500. And it was the dearness of food in 1873 and 1875 which was accompanied in Italy by a similar redoubling of such deaths. Within the last half century, the years 1846–47 and 1854–56 were throughout Europe noteworthy periods of scarcity, while 1848–50, notwithstanding revolutions and wars, produced excellent harvests. As compared to the two preceding years, 1846–47 showed an increase of suicide in all countries except Sweden and Bavaria; and the same, only in

greater intensity, was seen in 1854, with respect to 1852-53, Scandinavia alone excluded. * * * Of this economical influence we have other clear proofs by confronting later years, whether in single provinces or in the state [Italy]. The year 1869 shows a noteworthy decrease of voluntary deaths, compared with 1868, from 784 suicides to 633. And in all Italy the economical conditions of that year were most favorable. And so, compared with 1873-74, years of general scarcity in Italy and of very high prices for absolutely necessary food, 1875, on the contrary, favored by the best economical conditions and with bread at the lowest price, gave also fewer suicides.

The more carefully are the phases of crimes studied, the more clearly is it recognized that criminals form a distinct class of the community, a class that is continually recruited from the worst paid and poorest of the population, and that the criminal propensities of this class are due in great part to a defect in their mental condition, a defect that may be handed down from generation to generation, and producing a series of criminals, and in part to the environment of the offender. The returns of crime would then be expected to show a regular and normal increase commensurate with the increase of population, due allowance being made for any improvements in the preserving of peace and administration of justice; and when any year shows a marked and rapid increase in the number of commitments there must be some other incentive active apart from the usual circumstances leading to crime. As the ranks of crime are recruited from the poorer classes, whatever tends to make their existence more difficult to support, whatever causes retrogression in the condition of the people, whether arising from a failure of crops, commercial panics, depressed trade and industry, a depreciated currency, or errors in legislation, at once causes an increase in the amount of crime.

Of the relation between the price of wheat and the criminal statistics there has been to my knowledge no study in this country. The results of English and German studies have clearly shown that such a relation does exist, and that the mutual variations are not mere coincidences, but a cause and an effect. In years of dearth and scarcity the number of commitments is very largely increased unless there are other forces which may counteract the full influence exerted by an increased cost of living. Every alteration in the criminal law, every change in the fiscal and commercial policy of the nation, must have some effect upon the social welfare of the people, and must influence the number of criminals, though this influence may not be at once apparent, but may require a considerable lapse of time to be clearly recognized.

In a little work on "Crime in England," published by Thomas Plint in 1854, there is a chapter on the influence of variations in the price

of food on the ratio of crime to the population, and, from a comparison of the price of wheat and the number of criminals for each year between 1805 and 1846, he shows that certain variations in the price of food and concomitant variations in the amount of employment for labor are always accompanied by an increase in the number of criminals committed. And in that long interval of time there are found but two exceptions to this rule. For the only instances of an augmentation in the amount of crime unpreceded or unaccompanied by a rise in the price of food are in 1815, on the return of the army and disbanding of the troops, and in 1834, when it rose fictitiously from the assaults and other offenses against persons, which had theretofore been arbitrarily omitted, being now for the first time included in the returns. And he also shows that in dear years the increase was greater in the most densely peopled—the manufacturing and mining—districts of England. But his statistics must be imperfect, because there is not included in them a large number of offenses against persons and against property committed while the Corn laws were in force, and who will hesitate to say that these laws were a fruitful source of crime? There could, from the nature of the case, be no record of all the offenders taking part in the many riots and disturbances, whether religious, political, agrarian or for the destruction of machines, during this period, which were largely due to a scarcity of food, the direct result of a series of bad harvests, but hightened and intensified by legislation. But the tables given by Dr. Weisz, in a recent number of the "Jahrbücher für National-Œkonomie," prove that the amount of crime in France, Belgium and Austria is increased by every rise in the price of wheat.

But while the influence of the price of food upon the mass of crime is clearly recognized, it has also been proved that the two great classes of criminal deeds, crimes against persons and crimes against property, are very differently influenced. In his report for 1847, Frederic Hill, the Inspector of Prisons, says:

> The conduct of the working class of Manchester since trade became bad and commercial distress prevailed has been highly praiseworthy. Though there has been much suffering, there has been no violence; and, except that there have been more petty thefts than usual, there has been no increase of crime of any kind. * * * Since trade has somewhat improved and the number out of employment has decreased, the number of petty thefts has also diminished.

And Plint thus sums up his studies in this matter:

> It appears that periods of distress do not aggravate the causes, whatever they may be, which lead to the fouler and more atrocious offenses against the person; nor yet does it appear that personal quarrels, mere assaults, are increased by them. Nor is the increase of

simple theft at all remarkable, being under the average increase of *all* crimes. It is far different with all classes of offenses in which practiced skill and daring and systematic fraud are more or less concerned, separately or conjointly. Burglaries, highway robberies, house and shop breaking, receiving stolen goods, frauds, forgery and uttering base coin, are fearfully augmented. It would seem as if the number, activity and recklessness of the adult classes of the criminal population were greatly increased by the action of general distress. * * * The fact remains, and it is undeniable, that in periods of general distress and destitution crimes of all kinds, except the more serious offenses against the person and simple assaults, are increased twenty-four per cent. on the average of all England; that crimes against property, accompanied with violence, are increased fifty per cent.; and that breaches of the peace, sedition, etc., are increased ninety per cent.

But the Germans have reduced this relation almost to a law, and Oettingen and Mayr have both determined from a different set of statistics that, with every rise in the price of wheat, the number of crimes against property increases and that of crimes against persons decreases, and an opposite result follows a fall in the price of wheat. And Mayr has shown that an increase of one larceny to every 100,000 inhabitants of Bavaria accompanies every rise of three farthings in the price of wheat, and, on the other hand, an equal diminution in offenses against property follows an equal fall in the price of wheat. This relation holds good for the long interval between 1835 and 1861, and is the most exact relation between food and crime yet determined.

The effects of dear food have been best illustrated by examples taken from European nations, because in them the struggle for existence is rendered more intense and the effects are sooner apparent than they would be in the United States. The various systems of land tenure, of taxation and of state interference with private enterprise, restrictions on employments or on commerce, have tended to render the condition of the European laborer comparatively much more miserable than that of his more favorably situated fellow laborer of America. But this is not to say that the same results may be brought about by the same cause in America as in Europe; it only says that the results may not be so widespread or so intensified. The American has a greater distance to fall. It may with a reasonable degree of certainty be said that the present situation of the country is such as will allow this agency of dear food to act with great force. In the brief and necessarily imperfect sketch we have given of some of the effects of this agency, it has been shown that the cost of obtaining food does exercise a marked influence upon the body and mind of man; and whenever this cost is increased, or, in other words, when a greater expenditure of money or of labor is required to obtain a subsistence, the physical and social condition of the lower classes deteriorate. Now these specula-

tions are of interest at this time, because during the past three years there has been a very rapid advance in the prices of commodities of consumption, and notably of food; and the advance has been specially marked in this year on account of the long continued drouth. Mr. Grosvenor, of New York, who has made the subject of prices a special study, by taking the *per capita* consumption of the population during the four years past arrived at the following results:

> To purchase the same quantities of the articles embraced in the comparison [food, clothing, iron, etc., and lumber, etc.], therefore, would have cost 21.54 per cent. more about November 1, 1879, than on the same date in 1878; it would have cost 4.2 per cent. more in 1880 than in 1879; and would have cost 7.65 per cent. more November 1, 1881, than on the same date last year. The advance in general average of prices since the lowest point, about November 1, 1878, has, therefore, been 36.4 per cent. It will be observed that a very large proportion of the advance has been in articles of food. In that class the rise of prices has been greater, but less regular, than in any other. The main advance has been in breadstuffs and port products, and this season in milk, in consequence of the prolonged drouth. In beef, mutton, tallow, and even in butter and cheese, the increase, though considerable, has been much less than in grain and pork. * * * While the increase in the cost of grain since 1878 has been 50 per cent., in meats 44 per cent., in dairy products 70 per cent., and in sugar and the remaining articles of food only 15 per cent., the increase in clothing has been 26 per cent.; in the class embracing the metals, coal, oil, hemp and glass, and representing the department of tools and machinery, the increase has been 31 per cent.

He also shows that it now requires $111 to purchase what in October, 1878, required but $81.40, and the tables given by Mr. Burchard, the Director of the Mint, in his last report to Congress, point to a like result.

What will be the effects of this great rise in the cost of living? Turgot, in his "Reflexions on the Formation and Distribution of Wealth," laid down the harsh principle that, on account of the competition among laborers in every species of labor, it must, and in effect does, happen that the wages of the laborer are only sufficient to procure a bare subsistence for himself and his family. And it was at one time vainly endeavored to determine what are the "necessary wages" of the laborer, by which is meant such wages as will procure for him a sufficient quantity of food and other articles, and below which he cannot subsist. But this quantity cannot be determined once for all, because, as we have said, it is largely dependent upon circumstances. The standard of comfort varies widely among different peoples. The Chinese will subsist on rice, the Irish on potatoes, the Scotch on oaten diet, and the English on wheat, and no common measure could be found among them. Doubtless there are in every country large numbers living on the verge of starvation, whose wages barely suffice to procure the necessities of life, and on this class any increase on the

cost of food will fall with terrible effect. Their more fortunate brethren can retrench their expenditure, and thus be able to bridge over any temporary difficulty. But they, too, will suffer. For wages do not follow the fluctuations in the price of subsistence. What may be called for convenience *necessary wages* is only the lowest point to which wages can fall and the laborer yet exist, and to this extent it may be said that wages are governed by the price of food. But, unless the rise in the price of provisions is permanent, there may occur sudden and violent fluctuations in the price of food without any accompanying variation whatever in the rate of the wages of labor. Mr. Grosvenor's figures show that, since November, 1878, the average rise in the prices has been 36.4 per cent,, and doubtless there has been a rise in the price of labor which may partially compensate for this advance. But that it has not equaled it is shown by the discontent and strikes among laborers, the numerous complaints that are finding utterance, and the many and confident predictions that the coming winter is to bear heavily upon the lower classes. Whether this has been produced by inflation, or by a partial scarcity, it is all the same in its results. It means that the lower classes must be more poorly fed, more poorly clothed and more poorly housed; that they must labor longer, and that they must stint themselves in their enjoyments. It means that, as food takes a greater portion of the wages of labor, there will be less to spend upon manufactures, that less labor and capital will find employment because of the decreased demand for manufactured products, that the prices of manufactured articles will fall, and the weaker holders of large stocks will be unable to sustain their credit, and their fall may involve larger and stronger houses, and thus by a cumulative process a rise in the price of food may produce a crisis, just as the abundance and cheapness of wheat in 1879 secured prosperity to this country after years of depression. But we hope to discuss the purely economic effects of dear food and high prices in general in a future article. In order, then, to relieve this distress, it is necessary to remove whatever influence may tend to intensify it. The tariff is a grievous and wholly unnecessary tax upon the laboring portion of the population; there is undoubtedly an inflation in our currency which may be easily remedied, and, if the speculation in food products subsides, prices may find a lower and more natural level. Dear food and dear money are no elements of prosperity. Food can not be too cheap. As Bentham says: "Provisions, the produce of agriculture, constantly and necessarily produce a market for them-

selves. The more provisions a man raises over and above what is necessary for his own consumption, the more he has to give to others to induce them to provide him with whatever besides provisions he chooses to have. In a word, the more he has to spare the more he has to give to manufacturers, who, by taking it from him and paying him with the produce of their labors, afford the encouragement requisite for the productions of the fruits of agriculture."

WORTHINGTON C. FORD.

SPURIOUS SYMBOLISM.

WITH no disposition to disparage either the beauty or convenience found in the legitimate use of symbols, it is proper to guard against the logical inversion by which, after a concept, perhaps noble or holy, has been evolved or depicted by mere instruments, the latter receive canonization. In especial it is at this time desirable to protest against the misapplication of symbols in studies of North American ethnology. Few writers on the pictographs, customs or religious rites of the North American Indians have successfully resisted the temptation to connect them, through a correspondence of symbols, with those of certain peoples of the eastern hemisphere. The Spanish priests found in Mexico many delineations of the cross and serpent, which satisfactorily proved to them the former introduction of Christianity. Adair delighted to show the existence of Israelitish ceremonials among the Muskoki. Kingsborough spent his life and fortune to establish similar relations between the chosen people and the Aztecs and Mayas, while Lafiteau traced the customs of the Iroquois to the pre-Hellenic inhabitants of Greece. Schoolcraft's ponderous tomes are rich in symbols of the most abstract character, such as "power," "deity" and "prophesy."

The frequent recurrence in America of the number *four* has become a new mine of treasure to writers infatuated with the mysticism of numbers. Alphabets, Runic, Akkad, Phœnician, and of all other imaginable origins, have been distorted from the Dighton Rock and multitudinous later precious "finds"; while other inscriptions are photographed and lectured upon to exhibit the profound knowledge by some race, supposed to have existed some time in North America,

in the arbitrary constellations of astronomy, and its familiarity with zodiacal signs now in current use. Our learned associations are invaded by monomaniacs, harmless save for their occupation of valuable time, who declare that every ancient cisatlantic object means something different from what is obvious to common sense; and their researches are gratified by frauds and forgeries, sometimes originating in mischief and sometimes in sordid speculation.

In examining the subject it is necessary to understand the precise relation between signs, symbols and emblems. These terms are often used interchangeably, but with liability to misconstruction, as many persons, although with small etymologic authority, ascribe to symbols an occult and mystic significance. A sign is the most general of these terms—that by which anything is made known or represented. A symbol has been defined as the sign of something moral or intellectual by the images or properties of natural objects; but that would include an emblem, in which, by a figure of thought, corporeal objects stand for moral and intellectual qualities, and a symbol should be distinguished as that species of emblem which is a constituted sign among men of such qualities. While, however, all symbols come under the generic head of signs, very few signs are in accurate classification symbols. S. T. Coleridge has defined a symbol to be a sign included in the idea it represents. This may be intelligible if it is intended that an ordinary sign is extraneous to the concept, and, rather than suggested by it, is invented to express it by some representation or analogy, while a symbol may be evolved by a process of thought from the concept itself; but it is no very exhaustive or practically useful distinction. Symbols are less obvious and more artificial than mere signs, require convention, are not only abstract but metaphysical, and often need explanation from history, religion and customs. They do not depict, but suggest, subjects; do not speak directly through the eye to the intelligence, but presuppose in the mind knowledge of an event or fact which the sign recalls. The symbols of the ark, dove, olive branch and rainbow, would be wholly meaningless to people unfamiliar with the Mosaic or some similar cosmology, as would be the cross and the crescent to those ignorant of history. The last named objects appeared in the class of emblems when used in designating the conflicting powers of Christendom and Islamism. Emblems do not necessarily require any analogy between the objects representing and the objects or qualities represented, but may arise from pure accident. After a scurrilous jest the beggar's wallet became the emblem of the

confederated nobles, the Gueux, of the Netherlands; and a sling, in the early minority of Louis XIV., was adopted from the refrain of a song by the Frondeur opponents of Mazarin. The portraiture of a fish, used especially by the early Christians for the name and title of Jesus Christ, was still more accidental, being, in the Greek word, ἰχθύς, an acrostic composed of the initials of the several Greek words signifying that name and title. This origin being unknown to persons whose religious enthusiasm was in direct proportion to their ignorance, they expended much rhetoric to prove that there was some true symbolic relation between an actual fish and the Saviour of men. Apart from this misapplication, the fish undoubtedly became an emblem of Christ and of Christianity, appearing frequently on the Roman catacombs, and at one time it was used hermeneutically.

Some further illustrations may be useful. An alphabet, or scheme of signs by which a language is written, is not in its essence symbolical, and the Semitic scheme, to which nearly all the graphic systems prevailing in the world can be traced, had not even its origin in symbols. The first step toward writing was the rude pictorial representation of objects without indication of any accessories, followed by application of symbolic meaning to some of the figures most used and known; and some pictures, more and more abbreviated, also gradually became conventional signs, which in time were made to stand for sounds, either syllabic or alphabetic. So the growth of symbols and phonetic characters, nearly related, but quite distinct, proceeded simultaneously with increasing divarication. Most ancient writing was indeed hieroglyphic—that is, a record made by one ignorant of, or unwilling to use, a phonetic method—but hieroglyphs dealt more in ideographic signs, representing objects by simply imitating their forms, than in those purely symbolic, which indicated their nature or properties. The development of writing began with rough marks for days, deaths, trophies, sheep, and the like, noting mere primary ideas, and slowly marched to abstractions through attempts at conveying by similar presentations such ideas as were but secondarily connected with them. Another advance indicated parts for the whole, and afterwards a few strokes suggested distinctive features of an object or an abstract idea related to it. Then certain pictures became representatives, not only of words and syllables, but of the initial sounds of names, which approached among the Egyptians very near to phonetic writing, but their hieratic system never completely separated ideograms from phonetic signs. The Phœnicians adopted exclusively the

latter, improving upon the Egyptian model, thus forming a true alphabet. But for present purposes it is only necessary to assert that, whatever be decided by paleographers to be the primordial originals of our A, B and C, they were signs and not symbols long before the Sidonian inscription was carved upon the sarcophagus of Ashmonozar.

It is true that the letters of an alphabet may, like a multitude of other objects, be adopted as symbols. In the science of algebra it was convenient to represent known quantities by the first and unknown by the concluding letters of our alphabet, so that in time A was considered a symbol of the fixed or certain and X of the doubtful or mutable. This is not criticised while the application is limited and its wholly arbitrary nature borne in mind; but suppose some ardent algebraist and symbolist should insist that the significance of these symbols was intrinsic to the letters, or even suggested from their forms. "Observe," he might say, "the very frame of A, a pyramid standing on its base, the embodiment of solidity, still further strengthened by a cross brace; of course it must signify the fixed and certain. And X, two bars only united at a middle point; top, base and sides nearly equal, and thus liable to be deflected readily to any position—perhaps an image of the spokes of a wheel, never at rest—surely it is the vague, the unknown." This *reductio ad absurdum* is not more obvious than many cases where symbols are manufactured and misapplied by enthusiasts.

Volumes have been devoted to the symbolism in the arbitrary signs used in arithmetical notation. The decimal system prevailed only because the human race rejoices in ten fingers for ready objective exhibit, and not some other digital allowance, and after the expedients of notches in wood, bags of stones, strings of shells, knotted cords, and the like, when the Hebrews and Greeks acquired the notion of representing number by characters, they employed the letters of the alphabets already in their possession. Our more convenient notation came through the Arabs, who about the tenth century obtained it from Hindostan (where, it has been asserted, the figures were anciently the initial letters of the Sanscrit names for the digits), and has rendered easy those calculations and deductions which display many curious properties of, and relations between, numbers. But it behooves to distinguish the ideas elucidated through mathematical experiments from the mere signs or value of the notation—that is, the apparatus employed—so that the latter may not claim a retroactive significance. The digit 9 is found to possess one peculiar property that, when the sum of the figures expressing a number is exactly divisible by it, the

number itself is also so divisible. That, however, is merely a casual incident to the decimal system, and that system is not only without claims to sacredness, but is so imperfect as to be recognized as an unfortunate adoption. Leibnitz has demonstrated the binary system to be so far superior that for many calculations it is advantageous to reduce from the decimal to it and back again after performing the operation. The property of 9 just mentioned would, in the duodecimal system, which also has its advantages, not belong to that number, but to 11, so that its mystical character in that respect is an accident of an accident. Many of the curious and often beautiful results from combination of numbers have, on close examination, no more intrinsic import than the also curious and beautiful reflections produced by turning a kaleidoscope, and dependent on much the same principles of mathematical relations between quantities and magnitudes.

Devotees of symbolism, in their undue zealotry, seem to have pried about with a number in their hands, determined to fit it into some object, like trying a stray key to all accessible locks. A not very ancient work sets forth among other attributes of the number seven, with much flourish, that there are *seven* planets and *seven* metals, which, indeed, was the limit then known; but we now recognize at least fifty metals, and the planets have also increased on acquaintance, apart from the asteroids, which at the present rate of discovery may soon swell the list to two hundred. Belief in the mysticism of numbers has often retarded scientific research. Huygens, in 1655, discovered a satellite of Saturn; he then stopped observations because the six planets (Saturn then being the oldest known planet) and the six satellites, one of the earth, four of Jupiter and this one of Saturn, made the "perfect number" of twelve. So, as he asserted solemnly, nothing more of the planetary system was left to be discovered. This blunder warns us not to build symbols needlessly on the shifting sands of ignorance, to be demolished by the advancing ocean-wave of science.

Symbols which have once reigned with perfect title may degenerate into petty signs. The chevron, an honorable ordinary in heraldry, representing two rafters of a house united at the top, was originally bestowed on the founder of a house or family thereafter entitled to bear arms, and in that use was a perfect symbol. When the modern army uniform was planned the facility of forming an obtuse angle by two strips of cloth led to the selection from among all the heraldic blazonry of the chevron to mark the sleeves of non-commissioned

officers, so that, while retaining both its name and form, its purport wholly disappeared. The initial character of medical prescriptions met a fate still more humiliating. Once portraying the extended wings of Jove's eagle, and used as a prayer to the king of gods for his aid to the action of the remedy, its very shape was corrupted until, resembling the letter R with a flourish, ℞, it is vulgarly called an abbreviation of the word "recipe." So, though once a sublime symbol, it has ceased to be even a respectable sign.

The barber's pole in the middle of its history was perhaps a symbol, having started as an honest, though prosaic, sign, and ends in the United States, at least, as one neither appropriate nor significant. The bloody band used by barber chirurgeons in their phlebotomy, wrapped for convenience spirally around a supporting rod, was in the last century still found in some Old World nooks, and when that utensil was exhibited in front of the shop it signified "bleeding done here," just as the old boot that the cobbler hangs over his door is the advertisement of his humble calling. When the red band was painted on the contrasting white ground of a pole, and the tonsor only drew blood by accident, instead of by profession, the device might claim some symbolic dignity; but the blue was added of late years in the United States, so that in the combination of colors now shown a fanciful physiologist has detected the distinction between venous and arterial blood, and the more poetic and religious mind has been exalted to suggestions embracing the colors of the ark of the covenant. Now the change has occurred from the enterprise of some patriotic barbers, who added blue to the red and white so as to include all the national colors, and the fashion once set to the imitative race which mainly does our shaving has lately advanced another step, so that their newest poles show the blue in a union, with the proper arrangement of stars, and the red and white stripes extending straight, instead of spirally, thus becoming nothing more nor less than a wooden United States flag of clumsy shape.

In conclusion, reference may be made to the persistent application of symbols to the interpretation of the pictographs and sign language of the Indians. All characters in Indian picture writing have been loosely styled symbols, and, as there is no logical distinction between the characters impressed with enduring form and those outlined in the air, all significant Indian signs and gestures might with equal appropriateness be called symbolic. But, while picture writing and sign language can undoubtedly be and is employed to express highly

metaphysical ideas, to do that in a symbolic system requires a development of the mode of expression consequent upon a similar development of the mental idiocrasy of the gesturers far beyond any yet found among historic tribes north of Mexico. A very few of their etchings, paintings and gesture signs may at first appear to be symbolic, yet even those on closer examination will probably be relegated to the class of emblems.

The several tribal signs for the Sioux, Arapaho, Cheyenne, etc., are their emblems precisely as the star-spangled flag is that of the United States, but there is nothing symbolic in any of them. So the signs for individual chiefs, when not merely translations of their names, are emblematic of their family totems or personal distinctions, and are no more symbols than are the distinctive shoulder-straps of army officers. The *crux ansata* and the circle formed by a snake biting its tail are symbols; but *consensus*, as well as invention, was necessary for their establishment, and the Indians have produced nothing so esoteric, nothing which they intended for hermeneutic as distinct from descriptive or mnemonic purposes.

The point specially urged is that, while many pictographs and gesture signs can be used as emblems and both can be converted by convention into symbols, or be explained as such by perverted ingenuity, it is futile to seek for that form of psychologic exuberance in the stage of development attained by savage and barbaric tribes. All predetermination to interpret either their signs or their pictographs on the principles of symbolism as understood or pretended to be understood by its admirers, and as are sometimes properly applied to Egyptian hieroglyphs, results in mooning mysticism. This was shown by a writer who enthusiastically lauded the *Dakota Calendar* (which is a mere figuration of successive occurrences in the history of the people) as a numerical exposition of the great doctrines of the Sun religion in the equations of time, and proved to his own satisfaction that the Indians preserved hermeneutically the lost geometric cultus of pre-Cushite scientists.

Another exhibition of this vicious practice was recently made in the interpretation of an inscribed stone alleged to have been unearthed near Zanesville, Ohio. Two of the characters were supposed, in liberal exercise of the imagination, to represent the A and Ω of the Greek alphabet. At the comparatively late date when the arbitrary arrangement of the letters of that alphabet had become fixed, its initial and concluding letters might readily have been used to repre-

sent respectively the beginning and the end of any series or number of things, and this figure of speech was employed in the book of Revelations. In the attempted interpretation of the inscription mentioned, which was hawked about to many scientific bodies, and published over the whole country, the supposed alpha and omega were assumed to constitute a universal as well as sacred symbol for the everlasting Creator. The usual *menu* of Roman feasts, commencing with eggs and ending with apples, was also commonly known at the time when the book of Revelations was written, and the phrase "*ab ovo usque ad mala*" was as appropriate as "from alpha to omega" to express "from the beginning to the end." In deciphering the stone it would, therefore, be as correct in principle to take one of its oval and one of its round figures, call them egg and apple, and make them the symbols of eternity. In fact, not depending wholly for significance upon the order of courses of a feast or the accident of alphabetical position, but having intrinsic characteristics in reference to the origin and fruition of life, the egg and apple translation would be more acceptable to the general judgment, and it is recommended to enthusiasts who insist on finding symbols where none exist.

GARRICK MALLERY.

THE LAW OF RENT IN ITS RELATIONS TO THE IRISH LAND QUESTION.

IN view of the very general discussion of the land question in Ireland, provoked by the attitude of the Irish Land League, the action of the British Government, and the frequent and persistent occurrence of of agrarian outrages over a wide area in that unhappy country, it has seemed to me that a brief restatement, in familiar form, of the economical doctrine of rent might be found instructive and not uninteresting to the readers of the "International." Few international questions, surely, concern the people of the United States more nearly than that which relates to the tenure of the homes and the farms of that country in which two millions of our fellow citizens were born.

Perhaps we shall be better prepared to consider this troubled question of the ownership and occupation of land in Ireland after clearly discovering, in the light of economical science, what rent is, whence

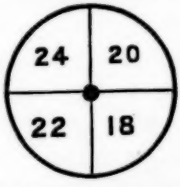
it arises, what is its measure and limit. If, indeed, there is any good reason why rents should not be paid in Ireland while rents are paid without challenge and with the consent of all decent and well-meaning people in England and in France, that will best appear after such a discussion as that proposed. If, on the other hand, the no-rent agitation is both lawless and groundless, this conclusion cannot but be established with greater assurance if we have first found out why rents are paid at all, and who, in the final result—*i. e.*, in their ultimate incidence—actually pays them. It is not my purpose so much to discuss the Irish Land Question as to lay a foundation for that discussion in a systematic and dispassionate statement of the economical principles governing rent and the price of land resulting from rent.

The term rent signifies the money or produce paid by the occupier to the owner of land, the latter word being used in its largest sense, embracing mining resources, water privileges and building sites. For the purposes of the present discussion, however, it will be best to draw all our illustrations from the occupancy and cultivation of arable land.

Rent arises from the differences in productiveness existing between the several areas of soil under cultivation[1] at the same time.

By productiveness is meant, in this connection, productiveness with a given application of labor and capital.

Let us suppose a community to occupy a circular tract of land, divided, as in the following diagram, into four sections equal in extent, but so differing in fertility that one piece will, with so many days' labor in the year given to plowing, cultivating and harvesting, yield twenty-four bushels of wheat per acre, while another will yield to the same amount of labor but twenty-two bushels, the third but twenty, and the fourth but eighteen. In order to simplify the elements of the problem, let us assume that all the inhabitants reside in and about the centre of the tract:



Let it first be supposed that the community is of such numbers

[1] A quarter of wheat may be raised in Kent, or Essex, or in the Carse of Gowrie, for a fourth or fifth part, perhaps, of the expense necessary to raise it on the worst soils under cultivation in the least fertile parts of the kingdom.—J. R. McCulloch.

that all the wheat required for its subsistence can be grown advantageously upon a portion only of what may be designated as the twenty-four bushel tract. If that tract be held by a number of competing owners, each acting for himself in the view of his own individual interest, no rent will be paid, or only a nominal rent so small that the principle *de minimis non curatur* will apply. Each owner of land in this tract will be desirous of securing for himself whatever compensation, if any, is to be paid for the use of his land; but, as all the soil of this degree of productiveness is not by our assumption required for the subsistence of the community, competition between owners of land will soon bring rents down to the minimum, since one may as well let his land be occupied for next to nothing as not be occupied at all, which would be the alternative in the situation described.

If, however, we assume such an increase in the wants of the community, in the way of subsistence for increased numbers, that the tract first in contemplation cannot provide all the wheat required, a portion of the twenty-two bushel tract will, perforce, be occupied for cultivation, and rent will emerge in distinct form. Any cultivator may just as well—may he not?—pay something for cultivating a part of the twenty-four bushel tract as cultivate a portion of the twenty-two-bushel tract for nothing. How much will he pay? Exactly the difference between the crops to be grown on the two soils with the same application of labor and capital—*i. e.*, two bushels, since he can afford to pay this rent rather than move to the less productive soil.

We said that no rent would be paid so long as all of the twenty-four bushel tract were not required for cultivation, provided that tract were held by a number of competing owners. If, however, that tract were held by one person or by several persons acting in concert, a monopoly would be established, and a rent might be exacted. What would be the limit of that rent? Two bushels per acre, since one would do better for himself to take up a portion of the twenty-two bushel tract for cultivation, paying no rent, than to give more than two bushels for the privilege of cultivating a piece of the more productive land. Would this rent of two bushels per acre be paid for the whole of the first tract? No; for only the number of acres actually required for cultivation; and all the owners in "the ring" would have to divide among themselves the aggregate sum so obtained. If any one owner tried to overreach the others and secure the full rent

for his own land, the ring would be broken, competition would set in, and rents would fall to the minimum.

But, to resume the course of our narrative, interrupted by this discussion of the effects of a monopoly of the best lands, let us suppose that in the course of time the twenty-two bushel tract becomes fully occupied, and still the community increases in numbers till not enough wheat can be raised from the two tracts to supply its wants. We must now contemplate the twenty bushel tract as coming under cultivation.

And we note, as the result of this downward movement of the limit of cultivation, two things:

First—The twenty-two bushel tract now begins to bear a rent, since one can as well pay a rent for the privilege of cultivating it as to cultivate a portion of the new land for nothing. The amount of that rent will be determined by the difference in productiveness between the two tracts, being, in this case, two bushels per acre.

Secondly—The tract first cultivated now brings to its owner a rent (24—20=4), not of two bushels per acre, but of four. It is no better land than it was before; it produces no more wheat under the same application of labor and capital; yet it yields its owner a rent twice as great as before cultivation descended to the third grade of soils.

And if, again, we suppose that the increasing needs of the community require the cultivation of the eighteen bushel tract, even the twenty bushel tract will bear a rent, viz., two bushels per acre; while the rent of the next tract on the scale of productiveness will be four bushels, and that of the most productive land will rise to six bushels, or three times its original rent.

We have said that by productiveness was meant productiveness with a given application of labor and capital. It must now be said that by productiveness is meant productiveness under similar conditions as to the cost of transportation, or, better still, after deducting the cost of transportation.

If, for example, we suppose that, in addition to the four tracts already described as surrounding the central village of our community, there had been another tract, of fertility equal to the best, situated at such a distance that the cattle and men bringing the wheat produced thereon down to the market necessarily consumed, going and coming, two bushels out of every twenty-four, that land, though precisely as fertile as the first tract described, would have borne no rent even when the second grade of soils came under cultivation.

Though its fertility had been expressed by twenty-four, its productiveness, net, after allowing for the cost of transportation, would have been but twenty-two. When, however, the third grade of soils came under cultivation, this land would have borne a rent, viz., two bushels per acre, which would have been increased to four bushels when cultivation came to be driven down to the lowest grade of soils.

It is evident that it does not matter, so far as the effect of the cost of transportation upon rent is concerned, whether that cost is made up of a certain amount of wheat actually eaten by the cattle and men bringing it down to market, or of the price of the same quantity of wheat sold and paid over to the owners of the railroads and steamships which, in an advanced industrial condition, replace the cart and oxen in bringing the produce of land to market.

In the light of the foregoing illustrations, we see:

First, that rent arises from differences in productiveness existing between the soils actually under cultivation at the same time and for the purpose of supplying the same market.

Secondly, that such differences in productiveness furnish the measure of rent, the rental of each piece of ground being the produce to be raised thereon, with a given application of labor and capital, over and above what can be produced on the least productive soils under cultivation.

Such is the economical doctrine of rent.

The price of land and the rent of land stand in a certain necessary relation to each other. Land has its price because it can command a rent. But while the relation between the two is a necessary one, being no less direct than that of cause and effect, the ratio between the rent of land and the price of land, expressed in terms of produce or of money, varies widely. In some countries, where the amount of accumulated capital is large, where a high degree of civil security exists and the rights of property are respected, the price of land may be twenty, twenty-five or even thirty times the annual rental. In other countries, from the failure of one or all of the conditions recited, land may not bring in sale more than fifteen, ten or even five times its rental. In the Southern States to-day there are vast breadths of good cotton lands for which a handsome annual rent, in kind, can be obtained by the owners, but which, if put up for sale, will not, on account of the scarcity of capital, command seven, perhaps not even five, years' rental. But, while the ratio between the amount of annual rent and the selling price of land thus varies widely, it must

be remembered that the relation of rent and price is a necessary one. Land bears a price only because it will bring a rent. No rent, no price. To say, therefore, that no rents shall be paid, is in effect to say that lands shall not be sold. To say that they shall not be sold, is to say in effect that they shall not be owned.

From the law of rent, as it has been stated, can be deduced the very important proposition that rent forms no part of the cost of obtaining agricultural produce.

Instead of reasoning abstractly concerning this proposition, which Mr. Buckle pronounces one of the most difficult theorems in the whole range of political or social science, let us take a concrete case. Let us suppose that a philanthropic English landlord, with a rent-roll of £10,000, should call his tenants together and say to them that, considering the very hard times and the great suffering of the poor, he had determined this year to remit the entire rent of all his farms, in order that the farmers might be enabled to sell wheat at a lower price, and thus the poor be enabled to buy bread at a cheaper rate. Two things would inevitably follow—first, the tenants, while humbly and gratefully thanking his honor, would, every man of them, laugh a very horse laugh in their sleeves; and, secondly, the quarter of wheat would be sold in every market of England, and the quartern loaf would be sold in every baker's shop, at exactly the same price as if the landlord had exacted his rents to the uttermost farthing. That amiable, but mistaken, gentleman would simply have made his farmers a present of £10,000, to be added to their savings in bank or otherwise disposed of.

But, asks the philanthropic landlord, is not the rent which my tenants pay me a part of their expenses, as producers of wheat, and, therefore, a part of the price of wheat which they sell? Yes, and no, answers the political economist. It is a part of the individual expenses of your farmers, as producers of wheat. It is not a part of the price of the wheat which they sell, since the price of wheat is fixed by the cost of producing it upon the least productive lands under cultivation—that is, the no-rent lands, the lands whose rental or selling price is so small that for purposes of economical reasoning it may be treated as *nil*. These lands now cultivated are cultivated because the community has grown so large as to require the wheat grown upon them, even at the expense of paying the cost of their cultivation. Unless that cost be repaid, through a price of wheat high enough to support the cultivators, those lands will go out of cultivation. But the fact that they are cultivated shows that the community

cannot do without the wheat from them, and must have it even at that price. But if the price of wheat is and is to be kept high enough to repay the cost of cultivation on the least productive lands, it must, *ex vi termini*, be high enough to afford a surplus on all the lands further up in the scale of productiveness. A farmer cultivating fertile lands is not going to sell his wheat at a lower price because it costs him less. He will get the same price as the cultivator of the poorest soils, since in the same market, at the same time, there can be but one price for different equal portions of the same commodity. A surplus will thus result, which, under the operation of the economical principle described, will go to the landlord as rent. The landlord may, if he please, forego a portion of it; but in that case the benefit inures to the tenant, not to the purchaser of grain or the consumer of bread.

The question of rent is, therefore, we see, a question between landlord and tenant solely. It is not a question between the producer and the consumer of agricultural produce.

We have now stated, with what may seem unnecessary particularity, and perhaps some iteration, the economical doctrine of rent. Our application of it is soon made.

The so-called law of rent, as enunciated, is true hypothetically; that is, true under the condition assumed, viz., that the owners and the occupiers of land, each for himself, fully understand their own pecuniary interests, and will unflinchingly seek and find their own best market.

How much does this mean? A great deal. It means that the landlord would as soon take a new tenant as retain one whose family had been on the soil for centuries; that he will entertain no other consideration than the realization of the largest possible rent, and that he knows all the facts which bear on the highest rate which could be charged for the use of the land, without driving away all would-be tenants.

On the tenant's part, it means that he would as soon move to another farm, to another county, or to another country, as stay where he is, should the least pecuniary advantage be offered by a change; that he has the means to remove himself and family; that he thoroughly knows and can intelligently canvass within himself all the varying advantages of a sufficient number of localities to make his choice practically indefinite; and that neither fear, nor dread of change, nor love of home, friends or country, will intervene to keep

him from his best market—that is, where he can rent land of a given degree of productiveness at the lowest annual rate. In a word, the doctrine in question assumes that rents are determined solely by competition, and that competition is perfect within this sphere.

The briefest recital of the foregoing conditions shows clearly that the law of rent as laid down cannot furnish a formula by which the rent of a single piece of land on the globe can be determined in advance. The law is true only hypothetically, and the conditions assumed exist nowhere, and never did exist in the full degree assumed in respect to any portion of the earth's surface.

Yet this theoretical doctrine of rent is not, therefore, to be regarded as vain and illusory. In some countries, as notably in the United States and in England, it furnishes the great underlying principle according to which, with more or less of divergence from general or from local and individual causes, the actual rents paid are primarily determined. In other countries, like those of continental Europe generally, where not competition, but custom, is the main force operating on the rental of land, the doctrine of rent is still of the highest importance; first, as clearly furnishing the legitimate outside limits of rent; secondly, as establishing, beyond controversy or doubt, the proposition that, up to those limits, the rents paid, be they larger or smaller, do not form a part of the cost of agricultural produce; and that the question of rent or no rent, of high rent or low rent, is purely a question between landlord and tenant, and not between the producer and the consumer of food.

We have said that in some countries the economical doctrine of rent furnishes the principle which primarily determines actual rents. The United States offer the most striking illustration of this. No owner of land in the United States would for a moment hesitate to demand on the expiry of a lease the utmost rent which he believed the tenant would pay rather than move away. And there is no public sentiment which would rebuke such action. So completely is the American mind imbued with the feeling that a thing is worth what it will bring; so little sympathy is here found for the notion of classes which, by reason of weakness, must for pity's sake be hedged in from contact and competition with outside forces; so vast are the tracts of arable land not yet occupied; so freely do our people move from place to place; so slight are their attachments to locality, that no prejudice whatever would be created by a landlord's demanding the utmost rent which the tenant could, and in the result, would, pay. The

fact that the tenant actually paid the rent demanded would be proof sufficient that he ought to pay it, that the land was worth it, and that the landlord showed only a proper sense of his own interest in advancing the price. Nay, should the tenant refuse to pay the increased rent and give way to another, I know not an American community where the slightest odium would attach to the landlord. It would be felt, it would be freely said: If the tenant does not wish to pay the price of the land, let some one take it who does. And what is true of the United States in this particular is true probably in nearly equal degree of Canada and Australia, new countries exhibiting the same general conditions of social life.

When, however, we reach the shores of England, we find a new force entering actively to influence rents, all on the side of the tenant's interest. Here the sentiment that there are classes which, by reason of wealth, education and social position, are bound to do much, on the one hand, and to forbear much, on the other, out of regard to the interests of classes which are deemed to be, by reason of poverty and ignorance, permanently and hopelessly weak and, in a greater or less degree, dependent, is universal. Society is built up and compacted together under the constraints of this feeling. *Noblesse oblige:* the gentleman must never forget, in dealing with his servants, his laborers, his tenants, and even in some degree his trades' people, that he is dealing with inferiors and dependents, who are, in a sense, under his protection, who cannot easily defend themselves against encroachment or fully assert their own interests, and that, in consequence, he is bound to act somewhat differently, it may be very differently, from what he would were he dealing with his equals.

But it is in regard to land that this sentiment operates with the greatest force. It would be morally impossible for an English landed proprietor to feel that freedom in regard to raising rents which might characterize the action of an American land-owner. A gentleman there who should undertake to force up rents to a maximum without respect to the views of his tenants, especially without regard to the interests of such of them as, by reason of losses, of age or of personal injuries, should be less self-helpful than others; who should act on the principle that if his present tenants could not or would not pay his price he would find others to do it, would simply be "cut" socially in any county of England. Gentlemen would not sit with him on the bench; ladies would not call upon the ladies of his family. An English landlord who should drive away tenants whose families had

been on the soil for centuries, would feel the lash of public indignation descend on his back till life was made a burden to him. Instead of gaining increase of style and state through an enlargement of his rent roll obtained in this manner, his social standing would be destroyed at once.

With a condition of public sentiment thus acting strongly and steadily in restraint of the natural impulse of the land-holding class to advance rents to the maximum, we should look to see a divergence of actual from theoretical rents, all on the side of the tenant's interest; and such, indeed, we find to be the case on the admission of so earnest a radical as the author of the "History of Agriculture and Prices in England." "The rent of agricultural land," says Prof. Rogers, "is seldom the maximum annual value of the occupancy; in many cases is considerably below such an amount."

On the Continent of Europe rents are, in general, not determined by competition, but by custom, to which Mr. John Stuart Mill has assigned the same beneficent function in economics that it has always performed in the sphere of politics, as "the most powerful protector of the weak against the strong." In Switzerland, France and Italy rents were formerly fixed almost universally by the custom of the country, at a certain definite portion of the produce of the land. This species of tenure, known as the metayer tenancy, has been fully recognized by economical writers as giving to the peasantry of the countries where it prevails the use of land at less than the maximum rents as determined by the application of the purely economic formula. So strong is the force of custom in protecting the tenants' interest in these countries that oftentimes it happens that, even where cities have sprung up during the continuance of a family upon the soil, giving a local market for produce, and, by consequence, greatly raising prices, the landlord, even in admitting a new family to the estate, does not attempt to exact a larger share of the produce by reason of the increased advantages of cultivation.

"A proprietor," says Sismondi, writing of Tuscany, "would not dare to impose conditions unusual in the country, and, even in changing one metayer for another, he alters nothing of the terms of the engagement."

Having seen how far actual may be made to diverge from theoretical rents, all on the side of the tenant's interest, by the force of a public sentiment restraining the greed of the landlord class and protecting a class deemed necessarily helpless and dependent against

exaction and against eviction, let us now turn to a country where, in the time of which we are to speak, the population was not homogeneous; where prejudices of race and religion had engendered animosities which descended from generation to generation as a sacred legacy; where no friendly public opinion stood guard over the interests of a peasantry whose own improvidence and recklessness concurred with the unrestrained greed of the landlord class in inciting a fierce and unremitting competition for the occupancy of the soil.

The sad and shameful story of the wrongs done to Ireland from the reign of the Tudors down to that of George III. is so familiar that it is needless to enter into details to show why it was that in Ireland nothing intervened between landlord and tenant to break the force of competition. It was not merely that the two classes were of different races, of different religions, and in some degree also of different speech. The confiscations and colonizations of Elizabeth, the wars of Cromwell, and lastly the Penal Code, of which the temperate Hallam says, "to have exterminated the Catholics by the sword, or expelled them like the Moriscoes of Spain, would have been little more repugnant to justice and humanity, but incomparably more politic"—these were the prime causes which had engendered antagonisms and animosities such as have rarely, in modern times, divided the population of any land. "On the same soil," says Macaulay, "dwelt two populations locally intermixed, morally and politically sundered. The relation in which the minority stood to the majority resembled the relation in which the followers of William the Conqueror stood to the Saxon churls, or the relation in which the followers of Cortes stood to the Indians of Mexico."

So late as 1874, Mr. O'Connor Morris, writing of three of the four great divisions of Ireland, said, "probably seven-eighths of the land belong to a proprietary of Protestants, and perhaps even a greater proportion of the occupiers are Roman Catholics." A century before, not even a pitiful eighth part of the land belonged to members of the church which comprised the great body of the people. The first act which relaxed the severity of the laws against Catholics in their relations to land was that of 1771, which permitted a Roman Catholic to take a lease for sixty-one years, of *bog*, of not less than ten or more than fifty acres, with not more than half an acre of arable land for the site of a house, provided the same were not within a mile of any town.

In addition to the prejudices, antipathies and animosities engen-

dered between landlord and tenant by differences of race and religion and by the effects of conquest and confiscation, another cause added to the severity with which rents were exacted. This was absenteeism, a great part of the soil being owned by landlords who resided in England or on the Continent, and transacted their business in Ireland through local agents or through "middlemen," who assumed the estimated rental of large estates and wrung from the peasantry whatever they could.

By a kind of natural selection, out of these agents and middlemen came to be developed a distinct species of social animal, peculiarly fierce and cunning, of preternatural acuteness to search out every possible occasion for fresh exactions, and with hearts of flint and faces of brass. Only men with a natural aptitude for exaction, distraint and eviction were selected for such a work; years of practice made them perfect in the arts of extortion, while the consciousness of being despised and hated with a frenzy which turned an open-hearted, generous peasantry into assassins and midnight fire-raisers, choked every casual thought of pity, and made absolute heartlessness both a professional virtue and a condition of self-preservation. Meanwhile, the landlord, expending his rents in distant cities, it might be in noble state and splendor, it might be in riot and debauchery, heard nothing of the piteous appeals for forbearance or remission of rent, saw nothing of the misery of distraint and eviction, had nothing to apprehend from the frenzied rage of the ruined and homeless peasant.

Such was the situation in Ireland, on the part of the landlord class, furnishing all the conditions necessary to a rigid and relentless enforcement of rent, up to the economical maximum—*i. e.*, to the extent of giving to the owner of the land the entire surplus produce above the cost of cultivation on the poorest soils.

How was it on the side of the peasantry? Were they prepared to supply the conditions which should prevent competition from becoming disastrous, destructive? Unfortunately, the peasantry of no country in Europe were less fitted to enter upon such a struggle with the landlord class. Generous, sanguine, improvident even to recklessness, the Irish people clung the more closely to the land the more miserable their lot; multiplied at a rate altogether inconsistent with the capacity of the soil for providing subsistence, as the art of agriculture was then understood, and competed among themselves for the occupancy of smaller and continually smaller parcels with a passionate eagerness which allowed little thought to be given to the

probability of being able to fulfill the promises so lavishly made in order to secure possession of the coveted land. Had it been a stationary population, like that of France to-day, which entered on this struggle for the fruits of the soil, the peasantry might have had some chance; but, with a population at least fifty per cent. beyond the capabilities of the soil to support, while every year largely increased the number of eager, penniless competitors, misery could hardly fail to result. There is little doubt that the Roman Catholic clergy and the Tory party agreed in encouraging the early marriages and the frequent christenings which became the curse of the Irish peasantry, and in denouncing the benevolent doctrines of Malthus as obscene, profane and even blasphemous.

In the situation described, with the aggressive tendencies of the landlord class stimulated to the highest degree, and uncontrolled by the kindly sentiments or the conservative usages which in every other country in Europe during this period operated for the protection of the tenant's interest, and, on the other side, with the power of self-assertion in the Irish peasantry reduced almost to a minimum, it was a matter of course that rents were advanced to the full limit allowed by the economical law we have stated. But there was more than this and worse than this. Rents were demanded by the agent, or middleman, rents were even offered by the peasantry in the eagerness of their competition, far in excess of the economical maximum; in excess of what could possibly be paid; in many cases in excess, incredible as it may seem, of the whole annual produce of the soil.[1]

But, it may be asked, if the tenants could not pay the rents, what harm to promise them? The landlords clearly would be disappointed; but how would the tenants suffer?

The injury done to the peasantry through this cause was threefold:

First—The whole possible produce, be the same greater or less, above the bare necessities of subsistence, belonging to the landlord, the tenant had little interest in the crop or in keeping up the productiveness of the land. Having nothing to hope for, and being in so bad a plight that there was nothing but eviction left to fear, all energy, all inspiration died out of the cultivation of the soil. What was done was always the least and the meanest that could be done.

[1] Cottier rents are nominal in pecuniary amount, because these rents are fixed so high that it is impossible for the cottiers ever to pay them. The nominal amount of the rent far exceeds the whole produce which the land would yield.—H. FAWCETT, Pol. Economy. This statement is probably somewhat too sweeping.

Secondly—The promise of excessive, and indeed impossible, rents kept the tenant always in debt to his landlord. Hopeless debt differs little from slavery; the Irish cottier lived by the breath of the agent or the middleman, who had it always in his power to drive him and his family from their home into a condition of inexpressible misery.

Thirdly—The joint effect of the causes described was continually to lower, until the very bottom was reached, the standard of living, and consequently the cost of cultivating the no-rent land, or lowest grade of soils.

We have said that the price of agricultural produce is determined by the cost of cultivating the least productive soils actually occupied. But the cost of cultivation is made up chiefly of the "necessary wages" of the laborers or occupiers. In "necessary wages" is included all that the laborer will have to eat, to drink, to wear and to warm himself withal, or else he will refuse to marry and bring children into the world to keep up the supply of labor. What the supply of labor shall be must always depend upon the body of laborers themselves, although unjust laws, arbitrary landlords and bad political economy may do much to make the working classes foolish and reckless in the decision of this momentous question.

It is perhaps the worst of all the fallacies of the political economy of the schools that economic forces tend constantly and certainly to the repair of economic injuries. On the contrary, only social and moral forces—like charity, education, religious inspiration—or physical forces entering the economic field, as in the case of the discovery of fresh supplies of raw material, of new and virgin soils, or of previously unknown arts and processes adapted to production, can be trusted to do the work of repair within the sphere of industry. Economic injuries tend to perpetuate themselves, not to disappear. The individual or class that has suffered a loss or injury is, by that fact alone, less fitted to maintain a further contest, while the individual or class that has gained an advantage is thereby helped to gain new and still greater advantages in the next ensuing contest. To him that hath shall be given, is the great law of economic life. This is illustrated in the history of all large fortunes where the first gains are made slowly, singly and with difficulty; but, the command of a considerable body of capital once obtained, subsequent accumulations are made with increasing ease and in almost a geometrical progression.

Specifically, it is the doctrine of the economists of the *a priori* school that the more miserable the lot of the laborer in any given

place or any given avocation, the more readily will he move to another place or take up another occupation, and the more will he withhold his increase, so that the evils of his condition will, in due time, be corrected. The human fact, so often to be distinguished from the economical theory, is that, as his lot becomes more miserable, the laborer is the less able, if not the less disposed, to change the scene or the nature of his work, and that it is the very poor and destitute who, in sheer recklesness, bring forth children most abundantly. So it proved in Ireland, under the conditions recited. As the lot of the peasant, under the pressure of population and the ever-increasing exactions of the landlord, grew more and more pinched and painful, the faster did population increase, and the more stationary it became. The Frenchman's paradox that the word fast in English means that which goes rapidly, like a fast horse, and that which does not go at all, like a post fast in the mud, is realized in the description of the Irish population during the worst days of absentee landlordism. Downward, continually downward, moved the standard of living, till the peasantry of Ireland came to be fed, unlike the prodigal of Scripture, upon food which would not even nourish swine.[1]

Even so late as 1844, though for twenty years systematic efforts had been made upon the reports of a half score of Royal Commissions and Parliamentary Committees to do something for Ireland; though extensive public works had been undertaken for the benefit of the suffering peasantry; though many judicious remedial measures had been passed by Parliament, and emigration had been carefully promoted; and though the whole body of cruel and wicked laws discriminating against Catholics and Celts had been swept away, Lord Devon's Commission on the Occupation of Land in Ireland found rents frequently exceeding the value of the entire produce of the ground; while of the tenants it is said that "in many districts their daily food is the potato, their only beverage water; their cabins are seldom a protection against the weather; a bed or a blanket is a rare luxury, and, in nearly all, their pig and manure-heap constitute their only property."—[Report of the Commissioners, page 35.]

Now, such a situation demanded the prompt and positive intervention of government. There was nothing in political equity or in

[1] Mr. Torrens, M. P., at the meeting of the Social Science Association, in 1867, stated that, when he was employed in sending out emigrants from Ireland in 1840, he found "that a large portion of the Irish people were living on a kind of potato called 'lumpers,' which were so inferior in quality that even pigs could not fatten on them."

political economy, rightly understood, to have prevented the immediate revaluation of tenancies, the creation of an efficient system of tenant right, the offer of government aid in assisting the peasantry to purchase the lands they occupied, and the peremptory and abrupt discouragement of absenteeism by a heavy tax on the rents of all estates owned by absentee landlords. To cry *laissez faire* in such a situation was simply silly. Foreign force and wicked laws had brought about the result; and, if England really repented of her acts, foreign aid and helpful legislation should have been freely and courageously resorted to for the repair of these shocking social and economical injuries. To call upon a people crushed for centuries under a malignant race and religious persecution, and crowded down into the very mire, to rise up and rehabilitate themselves, with the benign assurance that hereafter they would be allowed fair play and equal rights, seems at this day something very like trifling; but it was, in sooth, not from lack of good will, but from a nervous fear of unsettling "the rights of property," and from the promptings of the bad political economy of that day, with its string of false assumptions and vicious deductions, that the public mind of England shrank from the heroic, which was also the only sensible, way of dealing with the Irish question of 1844. In the same year the factory act was carried through Parliament by the indignant demands of the people, against the opposition of the professional economists of the United Kingdom.

Close upon the disclosures of Lord Devon's Commission came the revolting revelations of the great famine of 1846–7, when a populous country, with no reserves of accumulated wealth, the usual subsistence of whose peasantry was the coarsest and cheapest food, found itself deprived, as by a blow, of that single support. The death rate of Ireland increased threefold in a single year, and famine and fever stalked over the fairest island of the northern seas. The heart of England grew sick at the tales of horror which every day brought across the channel. Never was an awakening of national conscience more complete. Clear-eyed and true-hearted, the English nation only needed to see the wrong it had done to be ready and glad, so far as the cowardice of politics and the teachings of a false political economy would allow, to make acknowledgment and reparation. Justice to Ireland became a ruling sentiment, almost a passion, with liberal statesmen and with the great mass of the English people. Measures that claimed to be in this interest were scrutinized with less of skepticism or conservatism than measures relating to any other

portion of the United Kingdom. "Ireland" has been the countersign at which every sentinel has withdrawn his challenge, and before which every gate has been opened. And this sentiment has not been chilled even by the peevishness of the professed leaders of Irish opinion or their often brutal ingratitude toward their best friends, like Gladstone, Bright and Forster. When one contemplates the legislation on Irish affairs during the last thirty years, in spite of its partial, fragmentary and often inconclusive character, he involuntarily exclaims, is this, indeed, the Parliament of England which speaks! Much, undeniably, that needed to be done has remained undone, or has been tardily done; but this has been due to the vices of political and economical theory already adverted to, or to the endless, senseless divisions among the Irish members of Parliament and the lack of clear, definite demands from Irish constituencies. Had the successive delegations of Ireland stood together on purely Irish questions, as the Scotch delegations invariably do on Scotch questions, without regard to party lines, or even had the Irish liberals, or even only the Irish Catholic liberals, presented an intelligible bill of grievances and a consistent programme of practical measures for redress, it had hardly been possible that they should be denied.

But it has not been in Parliament, or throughout England, alone, that a beneficent change in sentiment has been manifested. Ireland itself has shared in the ameliorating and liberalizing tendencies of the times. Differences of religion have, indeed, not disappeared, but the asperities and prejudices to which they gave rise have been softened to an extent which a generation ago would have seemed incredible. The brotherhood of Saxon and Celt has been recognized, not in terms of speech only, but in acts of daily intercourse, till the animosities of race have ceased to be a factor in the problem of rents in Ireland. This statement seems to be, but is not, contradicted by the petty spasms of hate, of a galvanic, not vital, origin, caused by impulses of a purely political purpose sent over the wires of a seditious league.

While thus the activity of competition on the part of the landlord has been greatly reduced, and the pressure of external force, in the nature of invidious legislation and an unfriendly public sentiment, has been almost wholly removed, the Irish tenant, on his part, has been able to offer an increasingly effective resistance to encroachment, and better and better from year to year to sustain his part in the struggle for the produce of the soil. This has been due to several causes.

First, the actual emigration of three millions of persons, which has sensibly diminished the pressure of population on the means of subsistence. This was, indeed, an essential condition of any large and permanent improvement in the condition of the Irish peasantry. Secondly, the possibility and continual imminence of emigration on the part of those who have remained has excited a powerful influence in raising the tenantry of the kingdom from their low estate. So generally has a knowledge of the conditions of emigration been diffused among the masses of the people, so completely has the Irishman's fear of change been dissipated by the glowing—often too glowing—accounts of the ease and even splendor of life in the new worlds of America and Australia sent home by relatives or friends, and so ready are those who have gone before to extend help to those who remain, that it has been practically within the choice of a great proportion of the Irish tenantry whether to stay in the old country or to seek fresh fields and pastures new beyond the ocean, as they should please. This has, of course, contributed greatly to their freedom of movement within the island, and to the activity, boldness and persistency with which they have maintained their side in competition for the produce of the soil. Thirdly, the rapid advances made in the art and the processes of agriculture since 1851, taking place at a time when all moral and social forces were favoring the efforts of the peasantry to improve their condition, has done much to raise the standard of living, in respect both of comfort and of decency. Fourthly, the remedial legislation of the past thirty, and especially of the last eleven, years has done much to bring about a sound economical order, through clearing off encumbered estates; through securing, in some degree at least, the tenant's interest in unexhausted improvements; through promoting the permanence of tenures; through facilitating the acquisition of small estates, and now through effecting a systematic revaluation of tenancies. The act of the last session seems to me to have supplied nearly all which political cowardice or defective political economy had left undone; and if the government which has had the courage to confront all that is bitter and hateful in England, and the greater courage to encounter the ingratitude of the very people it has sought to benefit, shall only keep its grip on the throat of sedition long enough and strongly enough to allow the benevolent intentions of that act to be fully realized, I do not see why the Irish land question may not be happily and finally settled.

FRANCIS A. WALKER.

THE SETTLED AREA AND THE DENSITY OF OUR POPULATION.

TO ask questions properly about any subject implies a certain amount of knowledge regarding it. The manner, even more than the matter, of the question indicates the degree of enlightenment of the querist's mind. I was asked not long ago, by a foreigner, "What is the density of settlement of your country?" to which I was obliged to give the true Yankee rejoinder, "What portion of my country?" The average density of settlement of such a country as this, some parts of which are peopled as fully as the oldest settled parts of Europe, while great stretches, empires in extent, are as yet almost without inhabitants, means nothing, and the question of my friend implied an ignorance as profound as that which has evolved a new and peculiar race upon this continent from the effects of climate and the admixture of aboriginal blood.

This question, however, although clumsily expressed, suggests an interesting subject, namely, the character of the settled area in 1880 and its relations to that at each of the preceding censuses.

As population nowhere ceases abruptly, but shades off by almost imperceptible degrees, an arbitrary line must be drawn somewhere beyond which the country must be considered as unsettled, although it may not be absolutely without inhabitants. Such a line may be properly taken so as to exclude regions having less than two inhabitants to a square mile. All the country outside this line may fairly be considered as unsettled territory, peopled, if at all, by a few scattering hunters, prospectors and cattle herders.

Under this definition the settled area is mainly comprised in one large body extending from the Atlantic Ocean westward to the neighborhood of the one hundredth meridian, and from the northern boundary to the Gulf of Mexico.

In this body is comprised probably ninety-five per cent. of our population.

Within this area, however, lie a number of tracts of land which, for certain reasons, remain thus far without inhabitants. The northern and most elevated part of Maine, comprising fully two-fifths of the area of the state, is as yet unsettled. The severe climate, dense

forests, and poverty of the soil, together with difficulties of transportation, have combined to deter the settlers from attempting the reclamation of this region.

A second unsettled region is that of the Adirondacks, where similar causes, added to the rugged, mountainous character of the country, have produced a similar effect. The northern central part of the lower peninsula of Michigan, together with large parts of the upper peninsula, and the northern parts of Wisconsin and Minnesota, still remain unreclaimed to the service of man.

These regions have a severe climate and are covered with heavy forests, which causes have been sufficient to turn the main tide of emigration southward and westward to the fertile prairies of Iowa, Nebraska and Kansas. But settlement is gradually creeping in on these regions, and year by year reducing the area of the waste lands.

A large part of the peninsula of Florida still remains unpeopled save by a few wandering Indians of the Seminole tribe. The low, swampy unhealthy character of most of this region is probably the cause of its having been neglected by settlers.

Outside this main region of settlement there are three large areas in the extreme west, besides a number of settled tracts of small size scattered about over the great western plateau. The most eastern of these areas extends down the central portions of Colorado and New Mexico, covering the whole breadth from north to south of the former and two-thirds that of the latter, besides extending northward into southern Wyoming. This may be conveniently designated as the Rocky Mountain group.

West of this, lying at the western base of the Wahsatch range, is a second important area, stretching north and south over the whole breadth of Utah and many miles northward into Idaho. This, which comprises the Mormon settlements, and is almost coextensive with them, may be known as the Great Basin group, from its locus.

The third group is that of the Pacific coast, comprised in California, Nevada, Oregon and Washington. It extends almost continuously from Puget Sound southward to San Diego, and from the Pacific Ocean to the Sierra Nevada and the Cascade range.

Besides these there are areas of considerable size in Montana, in the region about the three forks of the Missouri and on the head of Deer Lodge River; in Idaho, about Boise City and in the Salmon River Mountains; on the Humboldt River, in Nevada; about Tucson and

Prescott, in Arizona, besides numberless minor settlements scattered over the valleys and mountains of this region.

The total area of settlement in 1880 is estimated at 1,569,570 square miles, being slightly more than half the area of the country, excluding Alaska. The total population being 50,155,783, the average number of inhabitants to the square mile in the settled area is 32.

For purposes of discussion this settled area may be divided, according to density of population, into five classes, as follows:

1, A population of from 2 to 6 to a square mile; 2, from 6 to 18 to a square mile; 3, from 18 to 45 to a square mile; 4, from 45 to 90 to a square mile; 5, 90 or more to a square mile.

These divisions are not wholly arbitrary. They classify the settled region, to a certain extent, into natural groups, as indicated by the range and character of employments. The first three indicate a predominantly agricultural condition. Generally speaking, in this country agriculture is not carried to such a point as to afford employment and support to a population in excess of 45 to a square mile; consequently, the last two groups may be regarded as indicating the presence of trade and manufactures, with the accompanying quota of professional men.

Of the agricultural groups the first represents a very sparse population, such as might be sustained by the grazing industry in our western country, without agriculture proper. Accordingly, we find this group mainly along the frontier, in Florida, Minnesota, Nebraska, Kansas, Texas, California, Oregon, Colorado and the Territories. The poorer farming regions also sink into this class, and hence we find considerable portions of several of the older States represented.

The second group indicates almost everywhere the existence of defined farms and the systematic cultivation of the soil, but this either in an early stage of settlement or upon more or less rugged soil. This group is still well represented in many of the Western and Southwestern States and in the Appalachian Mountain region.

The third group, 18 to 45 inhabitants to a square mile, almost universally indicates a highly successful agriculture. In some cases, however, the admixture of a small proportion of mechanical employments serves to raise a poor farming region into this grade; but in general, where manufactures exist at all, they accompany a population of greater density.

Naturally, then, this group is most largely represented in the

Southern States, where the soil is fertile, the manufacturing interest of small amount, and the inhabitants almost entirely engaged in agriculture. The States in which this degree of settlement is predominant are Delaware, Virginia, North Carolina, South Carolina, Georgia, Alabama, Mississippi, Kentucky, Tennessee, Missouri, Illinois, Iowa and Wisconsin. Of the New England States, Maine, New Hampshire and Vermont have large areas in this class.

The fourth group indicates almost universally the presence of manufacturing and commercial interests in considerable amount. In Massachusetts, Connecticut, New York, Pennsylvania, Maryland, Ohio, Indiana and Michigan this group is in excess of any other.

The fifth group represents a very advanced condition of industry. This is found in excess of the other groups only in Rhode Island and New Jersey.

The following table shows the areas in the different classes of settlement at the date of each census:

TABLE I.—AREAS, IN SQUARE MILES, OF THE DIFFERENT CLASSES OF SETTLEMENT.

Date.	*Total area of settlement; 2 or more to the square mile.*	1	2	3	4	5
		2 to 6 to the square mile.	*6 to 18 to the square mile.*	*18 to 45 to the square mile.*	*45 to 90 to the square mile.*	*90 and over to the square mile.*
1790	239,935	83,436	83,346	59,282	13,051	820
1800	305,708	81,010	123,267	82,504	17,734	1,193
1810	407,945	116,629	154,419	108,155	27,499	1,243
1820	508,717	140,827	177,153	150,390	39,004	1,343
1830	632,717	151,460	225,894	186,503	65,446	3,414
1840	807,292	183,607	291,819	241,587	84,451	5,828
1850	979,249	233,697	294,698	338,796	100,794	11,264
1860	1,194,754	260,866	353,341	431,601	134,722	14,224
1870	1,272,239	245,897	363,475	470,529	174,036	18,302
1880	1,569,570	384,820	373,890	554,300	232,010	24,550

The first point that strikes the eye in glancing over the above table is the fact that with but two exceptions each group has continuously increased from the beginning; that, notwithstanding the constant and heavy drafts made upon the lower groups by the transfer of territory to the higher ones, still they have more than made it up by the reclamation of new territory.

The first decade, 1790 to 1800, shows an increase in the settled region of over twenty-seven per cent. The lowest group, however, suffered a slight loss, while each of the other groups gained in the neighborhood of fifty per cent. At this time settlements were, in the main, limited by the Alleghanies, and little attempt seems to have been made to overstep their boundaries, so that the energies of settle-

ment seem to have been mainly directed toward completing the work previously blocked out.

In the second decade, population having overleaped the mountain barrier, we note a decided change. The settled area has increased more than thirty-three per cent., and the lower group between forty and fifty per cent., a rate exceeded only in group 4.

In the next decade, 1810 to 1820, the total area has increased nearly twenty-five per cent. The greatest relative gains in the several groups have been in groups 3 and 4, but 1 and 2 have also increased very largely. Between 1820 and 1830 the increase in settled area has been twenty-four and four-tenths per cent. In this group No. 5 has made a great relative increase, followed closely by group No. 4. The smallest gain has been in group 1.

The next decade, 1830–40, shows nearly twenty-seven per cent. of gain in the total area of settlement, while all the groups have gained heavily. From 1840 to 1850 the total area has increased more than twenty-one per cent. Group No. 1 has made a great increase, but No. 2 has remained almost at a standstill. Nos. 3 and 5 have increased heavily, the latter nearly doubling in area. The next decade shows an additional area of more than 200,000 square miles redeemed from the wilderness. No. 1 has made but small gain in area, while all the other groups are largely increased.

Between 1860 and 1870 we see plainly the result of the war. The total area has increased but six and five-tenths per cent., while No. 1 shows a decided decrease. It is to be expected that such an event as our civil war should interfere very seriously with the reclamation of new territory, as the pioneer class is that upon which war would draw most heavily. All the other classes show an increase, though in 2 and 3 it is less decided than heretofore.

Between 1870 and 1880 there has been a large increase, more than sufficient to raise the average of the last two decades to the normal increase. This is due mainly to the immense emigration to the West from the Eastern States and Europe, during the past three years. During these years the inroads upon the public domain have been unprecedented in amount. The total settled area has increased twenty-three and three-tenths per cent., and that in group 1 fifty-six and five-tenths per cent. Group No. 2 has increased only two and nine-tenths per cent., while Nos. 3, 4, and 5 have increased in area seventeen and eight-tenths, thirty-three and three-tenths, and thirty-four and one-tenth, respectively.

The following table exhibits the proportions existing between the areas of the different groups and the total areas of settlement at each census.

TABLE II.—PROPORTION OF AREA OF EACH GROUP OF POPULATION TO TOTAL AREA OF SETTLEMENT.

	1.	2.	3.	4.	5.
1790	348	348	247	54	3
1800	265	403	270	58	4
1810	286	379	265	67	3
1820	277	348	296	76	3
1830	239	357	295	103	6
1840	228	361	299	105	7
1850	239	301	346	103	11
1860	218	296	361	113	12
1870	193	286	370	137	14
1880	245	238	353	148	16

We see that in 1790 groups 1 and 2 were equal in size. In 1800 No. 2 preponderated largely, while 1 and 3 were very nearly equal. From 1810 to 1840, inclusive, No. 2 continued to be the principal group, No. 3 being next in importance, followed by Nos. 1, 4 and 5, in the above order. From 1850 to and including 1880 No. 3 has been the most important group, followed by Nos. 2, 1, 4 and 5, in the order named.

The details of changes in the settled area can be better illustrated by dividing the country into convenient groups of states. A natural mode of division for this purpose is as follows:

First—The original thirteen States, with those formed from them, namely, Maine, Vermont and West Virginia.

Second—Kentucky, Tennessee, Ohio, Indiana, Illinois, Michigan, Missouri, Arkansas, Louisiana, Mississippi, Alabama and Florida.

Third—The remaining States and Territories.

The characteristics of these divisions are apparent. The first consists mainly of the States lying east of the Alleghanies, which, up to the time of the first census, formed a barrier across which settlement had spread only to a very small extent, only five per cent. of the population being at that time west of the mountains. The second group comprises most of the Mississippi valley, and the Gulf region, and may be said to represent the middle stage in the progress of development. The third group represents the more recent stage. It comprises the border States and the States and Territories of the Cordilleran region.

In the first group of States the increase in settled area went on rapidly until 1830; then its progress was checked, and the increase became merely nominal, as, it may be presumed, all the desirable land

had become occupied. But, while this increase went on rapidly until 1830, it is worthy of note that group 1 did not increase at all, inasmuch as all additions to it from unsettled regions were more than counterbalanced by the areas transferred from it to higher grades. Indeed, in the ninety years between 1790 and 1880 it has been reduced from 72,386 to 12,500 square miles, which is comprised in Maine, New Hampshire and Georgia. The increase in No. 2 stopped at 1810, when it comprised 115,462 square miles. Since that date it has decreased to 60,900 square miles, comprised mainly in Georgia, North Carolina and West Virginia. No. 3 continued to increase until 1860, since which date it has fallen off slightly. Nos. 4 and 5 have increased continuously to the present time.

In the second group of States the total area of settlement has increased continuously up to the present time. No. 1, starting with an area of 11,050 square miles in 1790, increased rapidly to 138,467 square miles in 1840, then decreased as rapidly to 48,637 square miles in 1870. During the last decade it has increased its area to 56,030 square miles, owing mainly to the spread of sparse settlements in Michigan and Florida. No. 2, starting in 1790 with an area of 4,200 square miles, increased to a maximum of 184,607 square miles in 1850, and since that date has decreased to 131,065 square miles. Nos. 3 and 4 have increased steadily from the date of the first census. No. 5 makes its first appearance in 1880, with an area of 3,360 square miles, comprised in Ohio, Illinois and Kentucky.

In the third group of States there were no settlements of any magnitude prior to 1840. Since that time the increase in the area of settlement has gone on uninterruptedly in all the groups. No. 5 puts in its first appearance in 1880, its area being comprised in the State of Wisconsin.

The following table shows the proportions at present of the areas of the five different population groups to the total settled areas in each of the three groups of States:

PERCENTAGE OF SETTLED AREA.

	1.	2.	3.	4.	5.
First group of States.....	3.5	16.8	46.0	28.0	5.7
Second group of States.....	10.0	23.4	44.2	21.8	0.6
Third group of States.....	48.8	28.1	21.7	1.3	0.1

The differences between the conditions of settlement in the three groups of States, as indicated in the above table, are too marked to need any comments. The first and second groups differ from one another mainly in the fact that in the former manufactures and com-

merce are more prominent industries than in the latter, while in the latter agriculture is by far the predominant industry, as is indicated in the table. The new condition of settlement in the third group is brought out startlingly in the table.

HENRY GANNETT.

INDUSTRIAL DAYBREAK IN THE SOUTH.

THE people of the South are beginning to recognize their splendid opportunities for making themselves rich. They have at last come to realize the wonderful possibilities of their section of the country. What is still better, they have learned by a hard and bitter experience that they can avail themselves of those possibilities only by devoting themselves, laboriously and intelligently, to industrial pursuits. A new era is dawning in the South. For the first time in its history its people are pushing forward to wealth, and thereby to the power which wealth alone can give, in the only way the human race has ever been able to attain it as a solid and permanent possession. The pursuit of politics is giving way to those employments and activities which make states and governments strong and enduring. The Cotton Exposition at Atlanta makes clear the fact that there is an industrial daybreak in the South, and a daybreak of such splendor as to promise a noontide of prosperity for the whole country.

The whites of the South were in bondage for a longer time than the blacks. Slavery ceased to exist almost twenty years ago; but, while the negro became a free man, the race to which his masters belonged labored under the disabilities imposed by slavery until very recently. It is a mistake that the blacks alone of the people of the South began their struggle with fortune at the close of the war. The whites also were called upon to solve problems that had never before been presented to them. They had, it is true, one great advantage over their freed slaves. They had the benefit of the traditions and of the heritage of their race. They had better minds and better training; but, in the work of making their way in the world, they had little more experience than the negroes, and they had not the negro's habits of industry. The whites had lived for generations on wealth accumulated by practically unpaid labor. Their chief business in life was to spend the money that was earned for them by their slaves and

their lands. They did not know how it was earned, or whether all that could be was obtained from the soil. The advent of paid labor made it necessary for the Southern land-owner to take charge of his own business, and he was not prepared for the task. He could not understand the first principle of business. He looked upon economy as meanness, and upon thrift and careful management as parsimony. He lived in the midst of one of the richest countries in the world, and he had not the faintest conception of the methods to be employed to avail himself of his opportunities. Not only that, he did not recognize those opportunities. English capital went into North Carolina and opened a few of its gold mines, but it was a long time before the native whites began to think that they, too, might as well go to work to hunt for the riches that lay hidden in their own soil. The war taught a lesson to the shrewdest of Southerners, for these learned from it that a nation cannot live without diversified employments for its people. They had had cotton enough, but they could not eat cotton, or kill their enemies with cotton, or clothe themselves with cotton without mills to make it into cloth. They foresaw that industries must spring up in the South at some time or other, but strangely enough very few of them made any attempt to induce Northern capital to develop their riches. If they did anything at all, they discouraged capitalists from going to them for the benefit of both. The hatreds of the first few years after the war, and the mistaken theory that all would come out right for the cotton States if they could resume their proper place in politics, prevented the South from sharing in the general prosperity of the country. The thriftlessness and extravagance bred by slavery could not be shaken off in a moment.

Time, however, worked wonders in the South, as it does everywhere. Not only did Southern politicians not resume their places in Federal politics, but it was found that men could not live on politics when there were no slaves to carry on the plantations. Poverty drove the Southern whites to work, and the certainty of gaining greater riches than the old slave times ever knew is keeping them at work. The change in the condition of things has been so slow and gradual that it has been hardly observed in the North. It is only within a few months that there has been anything like a general recognition of the important fact that the South is at last making an effort to engage earnestly in industrial pursuits. The absolute necessity of such an effort has but slowly dawned upon the Southern people themselves. They learned at first that they would be obliged to take up the work that

the slaves had thrown down. The necessity of working involved the question of how to work. The necessity of making a living gave birth to the desire to make fortunes. The men who raised cotton by their own labor for the first time, the men who boxed the pines of North Carolina and Georgia for turpentine, or who dug into the sides of the mountains for ore and coal and precious stones, or who grew cane upon the old slave-tilled sugar plantations, began to ask why they could not make as large profits from their rich lands as the wheat growers of the Northwest make from their bonanza farms. Inquiry and intelligent study have led to the realization that Southern industry is of the crudest character. The average cotton grower produces much less than a bale of cotton to the acre, whereas it has been demonstrated that from three to five bales can be grown. After it is grown, the cotton is picked carelessly and permitted to gather the dirt and rubbish of the fields. Then it is carried uncleaned to the gin—a machine still imperfect and inadequate, notwithstanding it was invented almost a hundred years ago. The dirty cotton is then pressed into huge, unwieldly shapes, and partially covered with a coarse jute sacking, which does not protect it from the weather, or from the dirt of the railway stations and the streets and wharves of the cities to which it is carried. So long as he owned his labor, the Southern farmer could afford to stand all this tremendous waste. Now that he must pay for what he gets, it is essential that he should make his cotton return him as much as possible. As cotton is now grown and handled, the average farmer could not make a living were it not for the fact that we raise in this country four-fifths of the cotton of the world, so that it must find a market at a fairly remunerative price. This brief statement indicates somewhat the crude condition of the business of growing cotton as it is now carried on. There are other startling facts to be told concerning the industrial condition of the South. Though settled at as early a day as the far East, its resources are as little developed as those of some of our newest Territories. Gold was found in North Carolina in 1799, but it is within a few years only that capital and energy have begun to work the mines thoroughly and systematically. The gold belt of Georgia is estimated to be about one hundred miles wide. The Southern people have known of the existence of gold ore in the strip of country which includes the western part of the Carolinas and northern Georgia for almost ninety years, and yet no determined effort was made to make available the possible riches which lay at hand. It was for years the most accessible gold

country in the world. It was nearer to railroads than any other mining country. It possessed a great number of excellent water powers, and it was heavily timbered. The last few years only have seen the people of this section recognizing the great possibilities for wealth that are hidden in their hills and mountains. A similar story can be told about iron. It has long been known that in northern Alabama there exist wonderfully rich fields of coal and iron. During the war the Confederate Government obtained its best supplies of iron from the mines there, and it was manufactured into arms at Selma. The opportunities for enriching the South and for benefiting the whole country by mining the ores the existence of which was known were, however, neglected. It seemed impossible that there could be prospective wealth lavish and abundant enough to tempt the people of the South into industrial pursuits. In 1870 Alabama produced only 7,060 tons of iron ore. Delaware produced more, and so did Maine and Connecticut and Georgia. Even to this day no railroad runs east and west through a country which is so rich in ore that Pennsylvania iron masters have been tempted to build furnaces in it. The Southern people sat calmly by and saw a road built into the heart of the region, giving it an outlet at the North. There was no effort made either to mine the rich mineral deposits—the excellence and abundance of which had been tested during the war—or to command the shipment of them from Southern ports when they should be mined. There was thriftlessness everywhere—the thriftlessness of a people who had been weighted down by a wealth acquired without the expenditure of thought or labor. There is no need of going further into the details of the story. The ignorance of the Southern people of their rich opportunities has been equaled only by the absence of desire to learn anything.

All this is now beginning to be changed. Enterprise and capital from abroad have gone into the South, and poverty has so chastened the minds of its people that they are willing to learn even of their ancient enemies. Northern men are welcomed now for the instruction in the arts of industry that they can give. It is beginning to dawn upon the Southern mind that the North is strong because it is rich; that it is populous because it has many different employments for its people; and that it has attained no wealth or power which the South can not equal and perhaps excel. The Atlanta Cotton Exposition is the expression of this new departure. Its collection of machines for the use of the cotton grower and the cotton manufacturer, and the

interest it excites, tell a fact that is full of promise to the commerce and manufactures of the country. The frequent and instructive meetings between the farmers and the spinners emphasize the fact. That fact is that the Southern whites are asking how they can send to the mills of New England more and better cotton. This means the recognition of the prevailing crude systems of cultivation and of handling. It means that the whites have at last taken hold of their agricultural problem, and are determined to solve it, and its solution is of the utmost importance to the whole financial and commercial system of the country; for, while we pay our way to the world in raw cotton, we do not reap as much profit from the staple as Great Britain with its forty million spindles and half million operatives. The new movement is beginning at the right end. The cotton grower is learning the lesson that the New England mill-owner learned years ago. He is learning the great importance of economy. He is beginning to recognize the fact that a business like cotton growing cannot greatly succeed unless due weight is given to every cent, and every fraction of a cent. He is beginning to find out that thrift may be as generous and hospitable as wasteful lavishness. The Northern manufacturer and economist have been giving him lessons from their own experience and observation, and he is beginning to listen with respectful attention to instruction in an art which he would have once called mean economy.

This is a very bright dawning, and there is much of hope in it for the future. Although very little in the way of results has yet been attained, the tide is fairly turned. There is no doubt that the new movement has begun, and that it will go on to its end. The whites of the South will do with their rich country what their race has done with every land in the world in which it has lived. The possibilities of the soil will be made realities. The Southern farmer now finds himself in the hands of the commission merchant and the money lender. Because he raises a special crop which he sells for cash, he is forced to buy all he uses for cash. Therefore, he must borrow on the security of his special crop, and deal on credit. The result is that he pays over fifty per cent. advance on the regular retail prices of what he purchases, and he borrows money at usurious rates of interest. He is learning, from this experience and from the teachings of shrewder men, the value of diversified crops. He does not begin to grow the wheat and corn and oats that he consumes. He does not raise his own food-cattle, or his own dairy products, although he possesses

some of the richest grazing lands in the world, while Dr. Loring, the United States Commissioner of Agriculture, has said that South Carolina and Georgia are the natural homes on this side of the water for the Jersey cattle. Some time or other the Southern farmer will have solved all these difficulties. This is sufficiently clear because he recognizes his backwardness as an agriculturist, and because he sees the end toward which he must work; because, in a word, he realizes his own shortcomings and defective methods. The Southern white farmer is a very intelligent man, and, now that he is awake to the demands that civilization are making upon him, it can be predicted with perfect certainty that he will succeed in doing with his lands all that can be done. Now that he has recognized the necessity of using the best machinery, and of handling his product with such care that it will go to the mill-owner in the best possible condition and with the least possible waste, it is certain that he will succeed in finding out what is the best machinery and what are the best methods of baling and shipping. He has found out that with these better methods he can secure ten per cent. more for his crop, and the change in his labor problem, and his own poverty, make ten per cent. a matter of vast importance to him. How important it is, may be judged from the fact that it would, this year, add $30,000,000 to the receipts of the cotton growers of the country. The Southern people are beginning to think of more than the mere growing of cotton. They are contemplating the manufacturing of their great fiber. Of the 11,000,000 spindles in this country, the South has a little more than 600,000; but these 600,000 make very large dividends for their owners. Some of the Southern mills pay profits ranging from fifteen to twenty-two per cent. on the capital invested. Statistics show that a bale of cotton costs the Southern mill-owner from five to ten dollars less than it costs the Northern mill-owner. The saving is in baling, freight, and insurance. This makes a difference of more than ninety thousand dollars a year to a comparatively small mill. It is beginning to dawn upon the Southerners that they ought to make use of their splendid water powers, which are rarely dry in Summer and are never frozen over in Winter. They are learning that the humid atmosphere of some sections of the South is favorable to the manufacture of cotton. They know that the first requirement is that they shall produce more cotton to the acre than they now grow, and that they shall send it to the market in better condition; but they look beyond and see the enormous power and

wealth which the business of manufacturing cotton will some day bring to them.

It is the best and surest sign that the South has yet given of the power that lies hidden in its future that it has recognized how far behind it is in all that goes to make a great people, and that it has set about the task of learning how to avail itself of its own possibilities. The hum of industry in the cotton field, the serious questioning about the worth to the farmer of the cotton seed, the speculation about the future of cotton manufacturing in the South, are not the only indications of the awakening of a new spirit. In that old country, contemporaneous with New England, there exists all the enthusiasm that is ordinarily found among immigrants to a new land. The people who were born there and who have spent their lives there have awakened to the fact that they have a country that is still new and undeveloped. That awakening has already accomplished wonders. The advance would be great had it consisted only in setting the Southern people to thinking; but the new birth actually took place months before the North knew of it, and the country was informed of it by some of its results. The North first recognized the poverty of the South's railway facilities, and extended its speculations to that section of the country, but Southern business men have done better. They are actually building, unaided by government, a railway that, when finished, will connect directly the Atlantic ports of the Southern States with the ports of the Pacific. The Georgia Pacific is also an indication of Southern interest in the coal and iron fields of Alabama and in the manufacturing business that must spring up there. When it shall be completed, the South will be in a position to avail itself of all the profit that can be made from the mining and the manufacture of the coal and iron of Alabama. The census of 1880 will show that important results have already been obtained. In the ten years between 1870 and 1880 the production of iron in the whole country increased 99 per cent. The production of Pennsylvania increased 97 per cent., while for every ton mined in Alabama in 1870 more than eight were mined in 1880. To quote the census returns, the increase amounted to "792 per cent." The production in 1870 was 7,062 tons, and in 1880 it was 62,986. No other State in the Union can make such a showing. While Alabama has made the most important advance in the iron industry during the ten years, it is not singular in that respect. To cite the census returns once more: Ohio increased its production "107 per cent." and New

Jersey "112." These are the two Northern States that made the most important advance in the period between the two censuses. In the South, West Virginia increased its production "104 per cent.," Tennessee "125 per cent.," Georgia "265 per cent.," Delaware "308 per cent." Industry has reaped some results in this field already. It is reaping results in some other directions, but it is largely by Northern and foreign industry, and the fruit that has been gathered has been an aid to the experiences of poverty in stimulating the Southern people to the adoption of industries that have brought wealth to their neighbors.

The increased production of iron is but an illustration of what is going on in the South. The gross results are unimportant, for, although Alabama's product of this one ore has increased "792 per cent.," the total increase is but 55,926 tons, while the increase of Pennsylvania's product, though only 97 per cent., is 1,779,860 tons. The healthful sign is that there has come to the Southern people a spirit of inquiry and a desire for investigation. They have just turned their faces in the right direction. That they have done this is a great gain for the whole country. There is in this beginning, in this industrial daybreak, the promise of great good to every section of the Union. The end is assured now that the beginning has been made. The Southern people have shaken off the false idea that they stand in the van of civilization, and recognize that, through their own neglect of their opportunities, their country is still new. The surface of the old State of North Carolina is just scratched. Its people know only that its mineral resources have been discovered. They do not begin to know how extensive or how rich they are. Georgia and South Carolina and Alabama and all the old Southern States are in the same position. They are virgin soil, and await the development that a people devoted to industrial pursuits can give them. The material interests of the whole country are about to reap the best and the full fruits of the abolition of slavery. Our aggregate wealth is about to be greatly increased. The North is beginning to have a direct pecuniary interest in the South, and that means the end of such sectional strife as the Union has known almost from its foundation. Northern capital is going at last into Southern railways and farms and factories and mines. It is trusting itself to the care of the local legislation of the Southern States. Northern money lenders are forming companies to loan money to cotton growers at a rate of interest that is high in New York, but very low in Georgia and Mississippi,

where men who ought to be prosperous have been kept in poverty by being compelled to pay as much as twenty per cent. a year on the loans on their lands. Northern spinners are coöperating with Southern farmers, with a view to benefiting both by securing better cultivation and better crops. While the politicians cannot for many more months keep up the semblance of sectional strife, there will doubtless always be sectional rivalry. The direction which that rivalry will first take has already been indicated. It will be between the spindles of the South and the spindles of New England. New England has a long start in the race, and the South is handicapped by the necessity under which its people are to devote all their industry and intelligence to the work of improving their methods of cultivation. The prosperity of the six hundred thousand Southern spindles, however, is a revelation to the eight million spindles of New England, for it demonstrates that the time is coming when the South will be a formidable competitor in the cotton goods trade of the world.

No one can visit the Atlanta Exposition and not have a feeling of exultation at the evidences of the birth of the desire among the Southern people to reap the advantages to be gained by industrial pursuits. It is the settlement of the vexed problem of our recent politics. It ends the controversy between the races. It adds to the Union a free, industrious and intelligent community. It increases our wealth by all the vast possibilities that have lain so long undeveloped and even untouched in the richest section of the land.

HENRY L. NELSON.

PAUL DE SAINT-VICTOR.

IN an article published in *Le Temps*, on the occasion of the death of Paul de Saint-Victor, in July last, M. Ed. Scherer characterized that brilliant and erudite *feuilletoniste* as "one of the notable writers of our century," and his book, "*Hommes et Dieux*," as "*une des choses les plus distinguées de notre temps.*" These words of an austere and exact critic would form a sufficient apology—if apology be needed—for presenting to English readers a man of letters of exquisite refinement of mind and remarkable erudition; a man of letters who loved letters for their own sake, and who, during thirty years of incessant

activity as a dramatic, a literary and an art critic, charmed and astonished the French public by an uninterrupted series of articles and studies, in which he placed the dazzling treasures of his style at the service of the passions or of the disdains of his elegant and fastidious taste. In England, where criticism of the scientific, expository and historical kinds has so long attained acknowledged superiority, a scholar and a writer of the calibre of Paul de Saint-Victor ought at once to be admitted into the first ranks of those who have well deserved of letters, not as creators, but as interpreters and praiseworthy zealots, as evangelists of the beautiful and of the excellent in art and in literature. Outside of France his name must be unfamiliar to all but the selected few who closely follow the movement of French literature; and the reason of this is not far to seek: the great mass of his work lies buried in the *feuilletons* of *La Presse* and of *Le Moniteur Universel.* As fastidious toward his own productions as he was toward those of others, Saint-Victor only rescued from oblivion a few of these *feuilletons*, "the least imperfect," as he modestly says, in the preface to "*Hommes et Dieux.*" At the moment of his premature death his collected literary baggage consisted only of four volumes, "*Hommes et Dieux*," already mentioned, "*Barbares et Bandits*," "*Les Femmes de Gœthe*," and the first volume of "*Les Deux Masques.*" When death surprised him he was correcting the proofs of a biography of Eugène Delacroix, in whose house, in the Rue Furstenberg, he spent his life, surrounded by a magnificent collection of old masters and objects of art. At the same time he was preparing for publication the second and third volumes of his *opus magnum*, "*Les Deux Masques*," the notes and rough drafts for which had been published in his *feuilletons* during the past twenty years. It will be of one of the volumes of "*Les Deux Masques*," namely, that devoted to Shakespeare, that Saint-Victor will principally win the posthumous admiration of Anglo-Saxon readers. Indeed, he might be presented to the English reader in his quality of a Shakespearian student alone, so great was his admiration of our English poet. In his plan of "*Les Deux Masques*"—tragedy and comedy, the mask that weeps, and the mask that laughs—he divided his work into three distinct series, the second of which he considered Shakespeare worthy to occupy alone, the first series being devoted to the Greek dramatists, Æschylus, Sophocles, Euripides, Aristophanes and Calidasa, the most celebrated poet of the Indian stage, and the third to the French stage, from its origin to Beaumarchais. This great work Saint-Victor left nearly

ready for the press. Other selections will be made from his writings, and published shortly in a form that will enable the public to assign to Saint-Victor his definitive place in the ranks of literature. The object of these pages is to present to English readers a writer and a critic whose fame is not destined to be short-lived, and who will always number not a few sympathetic and grateful admirers amongst those who find pleasure and satisfaction in communion with the literary and artistic masterpieces of past ages.

The Comte Paul de Saint-Victor was so utterly devoted to literature that his life affords no incident worth recording. He was born at Paris in 1827. His father was a man of letters, of delicate taste, much appreciated in his day. The young Paul de Saint-Victor received the best education that the Jesuit fathers of Fribourg could impart. His intellectual training was completed at Rome, not only in the College Romain, but also in the studios, the churches, the galleries and the salons of the eternal city. In 1848, some time before the revolution, he arrived at Paris, a finished specimen of the culture and polish of the Jesuit educational system. The correct and brilliant society in which he then moved, the distinguished and official personages amongst whom his literary novitiate was completed, rendered him in later life disdainful and often unjust towards a class of writers amongst whom he was destined to be known at the beginning of his career. He became one of the secretaries of Lamartine, who obtained for him the post of dramatic critic in the *Pays*, *Journal de l'Empire*, and in this capacity he was brought into contact with a joyous, independent, boisterously witty and Bohemian band, of which the leaders were Henri Murger, Champfleury, Charles Baudelaire and Théodore de Banville. The pupil of the Jesuits of Fribourg, with his courtly manners and intellectual elegance, did not relish this rude and rebellious pleiad, and, in a notice of Murger's "*Vie de Bohême*," he did not conceal his antipathy for heroes whose costume was redolent of familiarity with the pawnshop. From the very beginning Saint-Victor appeared as an aristocrat of letters, a Buckingham of style, with his majestic periods, his courtly tropes, and his phrases of a richness as exquisite as that of Venetian lace. He began by imitating the brilliant and highly colored style of Théophile Gautier, and ended by surpassing his master, whom he succeeded as dramatic and literary critic of *La Presse* in 1855. He afterwards wrote for *La Liberté* and *L'Artiste*, and during the past ten years he was dramatic critic of the *Moniteur Universel*, a post which he held at the moment of his death in July last. These

are the only details that we have to record of the life of Saint-Victor. For more than twenty years he shared with Jules Janin and Théophile Gautier the triumvirate of criticism in France. In the relations of private life he was coldly polite, proud and slow to make acquaintances, and still slower to make friends. Famous at the age of twenty-five as "*le Vénitien du feuilleton*" and "*le Don Juan de la phrase*," he never knew what pecuniary embarrassment meant. Well paid for his literary work, and during the last ten years of his life receiving a salary of ten or twelve thousand francs from the State as General Inspector of Fine Arts, he was able throughout his life to be above the necessity of making concessions, and to allow his mind to wander at will and at leisure in those elevated spheres in which alone it found satisfaction.

The sources of Saint-Victor's inspiration were twofold: a strong love of art and a sincere pursuit of truth. Art was for him a veritable intellectual religion. He was a disdainer of the men and things of to-day, and he systematically abstracted himself as much as possible from the epoch in which he lived. As a dramatic critic he dismissed, in a few rapid and incisive sentences, the great mass of vaudevilles and comedies which his brother *feuilletonistes* felt bound to discuss at length; and, brusquely taking leave of the modern stage, he would direct his superb periods to the resuscitation of the legends, the history or the theogomies of the past. By temperament Paul de Saint-Victor was an admirer of the mighty dead, of the great geniuses of the remote or near past, of Æschylus, of Sophocles, of Aristophanes, of Shakespeare. But the true fatherland of his talent was Greece; in intellect he was a Hellene. He might have received from the life of Plato the sacred precepts of eternal beauty. Theocritus and Meleager seemed to have whispered their familiar and graceful verses in his enchanted ear. Art, and art alone, occupied his whole life; and, above all, antique art. The beauty of ideas, of colors, of forms, of words, enchanted his imagination. No writer of the century felt more profoundly than Saint-Victor the mere beauty of language; no writer was a greater magician than him in the imagery that words call up. He knew how to choose the word that paints and at the same time defines; his study of the subtle precision of the Greek language taught him to take advantage of the richness and exactness of his own, and French literature affords few more remarkable examples of style than the studies and portraits in "*Hommes et Dieux*." The conclusion of the prose hymn to the Venus of Milo is worth quoting, as

summing up completely and briefly Saint-Victor's attitude toward the past and the present.

"Who," he asks, "has not felt, on entering the Louvre, in the hall where the Goddess reigns, that holy terror—*δεινα δαιμογια*—of which the Greeks speak? Her attitude is proud, almost menacing. The sublime felicity expressed by her visage, that unalterable happiness which a perfect being draws from its essence, dismays and humiliates you. There is no skeleton in that superb body, nor tears in those blind eyes, nor entrails in that trunk where circulates blood, calm and regular, like the sap of plants. She is of the stony race of Deucalion, and not of the family of blood and tears engendered by Eve. You are reminded of that Hymn of Apollo, attributed to Homer, in which smiles this strophe of such Olympian contempt, of of such cruel serenity: 'And the muses in chorus, replying to each other with their beautiful voices, begin to sing the eternal gifts of the gods and the infinite miseries of men, who, even as it pleases the immortals, live foolish and powerless, and cannot find a remedy for death nor a defense against old age.'

"Let the charm work. Wearied with the doubts and anguish of modern thought, rest yourself at the foot of this august marble, as in the shade of an antique oak. Soon profound peace will flow into your soul. The statue will envelop you with its solemn lineaments; you will feel yourself, as it were, entwined in its absent arms. It will raise you softly to the contemplation of pure beauty. Its calm vitality will pass into your being. Light and order will be made in your mind obscured by vain dreams, beset by gigantic phantoms. Your ideas will assume the simple turn of antique thoughts. You will seem to be born again at the dawn of the world, when youthful man trod with light foot the virgin earth, and the ringing laugh of the gods resounded under the roof of Olympus like joyous thunder in a serene sky."

Saint-Victor's view of the province and the utility of criticism was not that of Gustave Planche, who described it as "official idleness, a perpetual and voluntary leisure; the painful mockery of impotence, the death-rattle of sterility; a cry of hell and of agony." Like Sainte-Beuve, he found in a work other ideas than the author had perhaps thought of putting in it; but, with a far greater intellectual grasp, a wider erudition and a singularly vivid imagination, Saint-Victor sought in his criticism more than interpretation, more than incisive and psychological imagination, more than the expression of a soul. He was not hampered by the reticences and hesitations of Sainte-Beuve, anxious

to remain on good terms with everybody, and rather an elegant portrait painter than an authoritative critic. On the other hand, the violence of his passions and the bitterness of his disdain made it impossible for him always to maintain the imperturbable and good-natured placidity of Gautier, who rarely took the trouble to pass moral, æsthetic or literary sentences. Among modern French critics, Saint-Victor and Francisque Sarcey, so unlike in all other respects, were almost alone in pronouncing honest and clear judgments, supported with reasons, and saying absolutely why this was good and why that was bad. In spite of his love of the great dead, Saint-Victor conscientiously performed his duty as a critic; and, if he always hastened to return to the study of Hellenic poetry and theogony, of the artistic perfection of the Renaissance, or the universal splendor of the genius of Shakespeare, that surely is no reproach. In order worthily to write about those works and those figures, Saint-Victor fulfilled one condition of primary necessity: he knew how to find beautiful comparisons, graphic words, decisive epithets, the association of sonorous syllables whose harmony enchants and commands the soul. He was a creator and a poet as well as a critic; an inventor of an innumerable quantity of figures and images, expressing his thoughts by visible pictures, insomuch that his most erudite pages are not incomprehensible to the ignorant and the artless.

The reader will perhaps find our praise high; after having studied the "*Hommes et Dieux*," or the riper and more splendid work, "*Les Deux Masques*," he will, we think, recognize that such ardor, such absolute comprehension, and such powerful intuition as Saint-Victor has there displayed in the presentation of the Hellenic theogony and in the evocation of the formidable heroes of the Æschylean tragedy, are almost unique in modern criticism. As Victor Hugo said of him, Saint-Victor had "the double gift of the profundity of a great artist and the splendor of a great writer."

Amongst his historical studies Saint-Victor has left monographs worthy of Michelet of the great days of 1835. Nero, Marcus Aurelius, Louis XI., Cesar Borgia, Diane de Poitiers, have been painted by him in pages of the most brilliant originality; for Saint-Victor, in the study of history as in the study of literature, went back to the very sources, illustrating them by contemporary monuments, works of art, portraits, statues and medals. In all his work Saint-Victor followed the spirit of modern science, which, in art and in poetry as in natural history, teaches us that no fact is to be considered by itself and separately, and

that every phenomenon is connected with causes which have produced it, and other phenomena which preceded and followed it.

We venture to anticipate that Saint-Victor's volume on Shakespeare will attract considerable attention in England. It will have more than the interest of a French view of Shakespeare; it will almost have the value of a criticism of Shakespeare, we do not say by an Athenian of the age of Pericles, but by an Attic Alexandrine who might have been miraculously permitted to communicate to mortal the result of his posthumous study of Gothic and Renaissance civilization. The canon of beauty to which Saint-Victor's mind constantly recurs is that of Greek art. While he reads the histories of Shakespeare his memory is full of the terrors of the *Agamemnon* or of the *Eumenides*, and he finds Gothic crime loathsome and trivial as compared with the marble hand of Nemesis. "Incest and parricide," he says in one of his studies of *Richard III.*, "incest and parricide are the traditions of the kings of that dynasty. Their history is nothing but domestic slaughter. Murder for these creatures of violation and violence seems to be a physical necessity, and, as it were, a special appetite developed by the frequenting of forests where they pass their life in hunting. They are the Atrides of the North—Atrides that are deformed and often grotesque. Greek crime always preserves an air of grandeur; the blood that it sheds is beautiful as purple; kings' mantles might be dyed with it. Its victims fall under the sword which immolates them in the noble attitudes of the children of Niobe, pierced by the golden arrows of Apollo. Gothic crime is ugly and trivial; it degrades suffering; it debases death, and makes it grimacing. Orestes is dragged along by the marble hand of Nemesis; Richard III. and King John are kicked by the cloven hoof of Satan."

Saint-Victor was familiar with the works of Shakespeare's contemporaries and successors—Ben Jonson, Massinger, Ford, Webster, etc. Of our prose writers Swift alone, I believe, has been made by him the subject of a special study, and, amongst the many portraits of this hateful pessimist, Saint-Victor's is worthy to be mentioned. Like Taine, Paul de Saint-Victor regards Swift as a violent and repulsive representative of the English genius. In him he finds incarnate the unbridled pride, the sombre egoism, the obstinate hatred, the stinging irony, the unsociable humor, in short all the capital sins of his race and country. He cannot discover a single sympathetic trait in this misanthropical savage, whose life was a maleficent tyranny, interrupted by fits of frenzy. "In Swift," he says, "the talent is the man, a

hangman's dexterity, the misanthropy of a hypocondriac, the laugh of a tyrant. Sometimes he reminds one of the Apollo of Ribeira, with his knife dripping with blood between his teeth, watching the smoking corpse of Marsyas; at other times he suggests Shakespeare's grave-digger, jesting over an open sepulchre and breaking with his spade the skulls of the dead. As a pamphleteer, he is terrible and unique. Never was vengeance eaten more cold or chewed more phlegmatically. 'Woe!' said Augustus, when he bequeathed the empire to Tiberius, 'woe to the Roman people who are to be the prey of such slow jaws!' *Miserum populum romanum qui subtam lentis maxillis erit!* This cry of Augustus comes to our mind as we witness the executions of Swift, and, like Augustus, we pity the poor wretch who has fallen into the hands of this methodical torturer." Of Swift as a moralist, *àpropos* of *Gulliver's Travels*, Saint-Victor says: "This journey of Gulliver is really sadder than Dante's journey through hell. You seek in it in vain for the smallest opening heavenwards. How different from the imaginary voyages of the *Pantagruel* of Rabelais, to which it has so often been compared! Pantagruel's ship sails in the full tide of science and of nature; the breeze of the future swells its sails; the dawn of the Renaissance shines in the horizon before it. Like Gulliver's ship, it lands at the symbolic islands of Lying and Ignorance; but the joyous colossuses who are sailing in it face the monsters, blow upon the phantoms and exorcise the demons with a fulgurant burst of laughter. Swift's Gulliver travels without hope and without ideal. The chimerical countries that he visits show him the vices of humanity monstrously magnified or ridiculously distorted. In them he learns that humanity is incurable and incorrigible, and that all is vanity and calamity. The universe, as Gulliver discovers it, is but a vast system of hells and prisons rolling in the void. Even the idea of immortality Swift tries to disfigure and degrade. In the island of Luggnagg Gulliver finds a race of immortals—the Struldbrugs; but these immortals are idiotic and infirm old men, who drag themselves doting through their miserable eternity. Each lustre advances their decay, each century aggravates their decrepitude. The beings of whom Greece makes demi-gods are, in Swift's eyes, merely old drivelers, fallen into second childhood."

This study of Swift, though not a particularly happy specimen of Saint-Victor's work, is interesting as a foreigner's view of the great misanthrope, and also as another instance of Hellenic symmetry in art and in morals that was ever present in the critic's mind. With all his

hatred of platitude, and with all his disdain of contemporary mediocrity, Saint-Victor was never pessimist. He was too much of an artist and too ardent a worshiper of beauty to appreciate the dismal and pitiable misanthropy of Swift, whose genius is too insular to become acclimatized elsewhere than in his own country. To use Saint-Victor's own phrase, Baal holds sway at Carthage, Typhon reigns in Egypt; their cruel genius forms part of the public mind, their ugliness characterizes the country, their deformity pleases the people as the expression of its originality and of its power. But Rome refuses to adore these rude indigenous fetiches; the eternal and universal city does not admit them into its Pantheon.

From what we have said the reader will perhaps have obtained some idea of Paul de Saint-Victor's turn of mind, of his literary and artistic predilections, and of the nature of his multifarious erudition. Of the splendor of his style it would be hopeless to attempt to give any impression through a translation. Lamartine compared it to a kaleidoscope, and professed to be obliged to protect his eyes with blue spectacles from the glare of its pyrotechnic brilliancy; indeed, if any fault were to be found with this style, it would be that its richness is too abundant, its splendor of expression too perpetual, its intensity too continuous.

It can hardly be said that this grand-seignior of letters was, like Théophile Gautier, a victim of "copy." It is true that as dramatic critic successively of the *Pays*, the *Presse* and the *Moniteur*, he was forced to descend every Monday from the sublime hights of the poetry and art of Hellas to announce in his *feuilleton* the drama, the vaudeville, the clown, the "star," the buffoon, the *danseuse*, the performing elephant, the success and the glory of the week. He submitted to that baleful law of modern journalism that yokes to inferior tasks and ephemeral labors pens which, left free to work at will and in their own chosen path, might have added to the lasting treasures of literature, instead of momentarily satisfying the unprofitable greed of the curious public. Paul de Saint-Victor had conformed himself to this rôle; but he had exalted it by penetrating it with his personality and by putting into it his taste, his knowledge and his talent. His *feuilletons* were loose leaves of a fine book which posterity will collect into precious volumes; for, to quote the words of Victor Hugo, "his work is one of the works of this great century; it occupies the supreme summits of art."

THEODORE CHILD.

BOUNDARIES HISTORICALLY CONSIDERED.

SINCE Dido tricked the Numidian king in her survey and purchase of a site for Carthage, the world has been in constant trouble upon the subject of boundaries. The cry of "Fifty-four-forty or Fight," our national watchword in 1846, has found an echo in every age. A very large proportion of the wars of nations, as well as the lawsuits of farmers, have arisen over disputed boundary lines, and it is not creditable to our boasted modern civilization that the chosen representatives of two great governments can not meet and decide upon the line of demarcation of their territories in language that will admit of no future doubt or misconstruction.

If the truth must be told, it is that the geographer has been denied a voice in these matters, which have been left to the exclusive control of legislator and diplomatist, and the proverbial ambiguity of diplomatic language has been further complicated by an ignorance of geographical conditions. In the halls of Congress, our training school for diplomatists, it is no uncommon thing to hear the expression, "west of the one hundredth parallel." And this almost in the shadow of the office of the Coast and Geodetic Survey, one of the finest institutions of its kind in the world, whose officers, it would seem, are especially fitted to advise in the partition of the earth's surface. That such counsel has been needed and neglected, will appear in the course of this article.

The establishment of our northern boundary with the British Possessions was begun in 1782, and prolonged throughout nearly a century, it having been finally settled within the last decade. In that time it has been the subject of four treaties, whose meaning, after being expounded by several conventions and explanatory articles, was still so uncertain that in one case it was necessary to decide it by the arbitration of a friendly power, while in another instance the common sense of the surveyors had to be relied on to interpret the indefinite and unworkmanlike clause, "the most northwestern point of the Lake of the Woods," which, through all of this long era of treaty-making, has been named as a turning-point in that boundary line. It is safe to say that no one familiar with physical geography and accustomed to the precise language of mathematical diction would have selected

for an important station of an international boundary a point so vague in its meaning and so fluctuating in its position as this. It would, perhaps, not be difficult to find the most northwestern point of a circle or other geometrical figure with a definite center from which to draw a secant in a northwest direction to its intersection with the periphery, but to find a corresponding point on so unsymmetrical a body as the Lake of the Woods, without center or regular shape, was a puzzle to the engineers until they hit upon the device of drawing a northeast and southwest line tangent to the waters of the lake, and adopting the point of tangency as the station desired. This was first done in 1824–25 by the surveyors appointed under authority of the Treaty of Ghent. "The recovery of this position," said Major Twining, astronomer of the Northern Boundary Commission in 1873, "gave rise to much discussion, and at one time promised considerable trouble." This is not improbable; some of the bloodiest of the world's wars have hinged upon smaller causes than this.

In the early days of the Republic our northern boundary ran in a due west course from the Lake of the Woods to the Mississippi River; but in 1818, it having been learned that this was a wild-goose chase, owing to the fact that there was no Mississippi River due west of the Lake of the Woods, it was changed to follow the forty-ninth parallel, "from the Lake of the Woods to the Stony Mountains." Apparently the authors of this sentence, in convention assembled, thought that the Stony Mountains—the Rocky Mountains of to-day—rose up from the plain as boldly and unmistakably as a Chinese wall, else they would not have assigned to them the important function of a limit to national territory. On the contrary, the Rocky Mountains are almost as unreal as the Mount Caf of Mohammedan fable, which was thought to encircle the earth. They can scarcely be said to have a place except in our popular geographies and in the ideas of Eastern people. Like the rainbow, when seen from afar off they have a definite location, but as they are approached they vanish into thin air. Ask one of the settlers upon their supposed site, and he will point out the Sangre de Cristo Mountains, the Medicine Bow Range or the Elk Mountains, but the best guide on all the continental divide can not show the tourist the Rocky Mountains.

The distinguished geologist, Professor Dana, says of them: "This mountain mass is not a narrow barrier between the East and the West, as might be inferred from the ordinary maps, but a vast, yet gentle, swell of the surface, having a base 1,000 miles in breadth,

diversified with various mountain ridges, or spreading out in plateaus at different levels." Our western boundary was, therefore, at that time, 1,000 miles in width; but, happily, this vast border land, furnishing abundant room for international dispute, was not of long existence. By a treaty of limits with Spain in 1819 our boundary was described along the more precise route of meridians, parallels and the banks of rivers.

In this treaty there occurs a clause which, whether it results from carelessness, ignorance of the meaning of the geographical terms in which it is couched, or an indifference to the possession of a comparatively small strip of the immense territory at stake, is equally reprehensible in a legal document of this nature. It is agreed that the boundary, for a specified distance, shall run due north along "the degree of longitude 100° west from London and 23° from Washington." Here, in one sentence, we have two locations for the same boundary. By the meridian of London we must infer that they intended that of Greenwich, which is a suburb of London, and from which longitudes were reckoned at that time. Such being the case, the two meridians specified in this treaty as one and the same are about two and one-half miles apart. It may be pleaded in excuse that the longitude of Washington had not yet been accurately determined, but still it was no less rash and unmethodical to presume that the origin of longitudes in that city was exactly seventy-seven degrees from the observatory at Greenwich, a condition that could only happen by the rarest chance.

Some boundary lines seem ingeniously contrived to afford grounds for future exceptions and misunderstandings, and to exemplify the old-fashioned diplomatic doctrine that words are principally useful for the concealment of ideas. Such is the eastern boundary of Alaska, established by the convention between Russia and Great Britain in 1825, and adopted by our government on its purchase of that territory in 1867. "The line of demarcation," according to the treaties, "shall follow the summit of the mountains situated parallel to the coast." What mountains? There are range after range of mountains in that country, and it is but natural that their general trend should be parallel to the coast. If our maps of this region are at all reliable, the accepted "summits" are scarcely worthy of the name, since they are merely a succession of spurs from the great divide separating the Pacific and Arctic drainage.

Wherever the summit of the mountains aforesaid shall prove to be more than ten marine leagues from the ocean, the treaty says that the

boundary shall be a line parallel to the winding of the coast, and shall never exceed the distance of ten leagues from the same. But who shall define that meaningless expression, "the winding of the coast," where the edge of the land is broken with such a wilderness of indentations from the sea as are found here; and, this line having been described, by what laborious process shall the settler on the frontier determine his distance from this curve of reference, and in this manner learn the nationality of the soil which he possesses and the flag and jurisdiction which are over him?

In former times that indefinite point, the source of a river, was a favorite origin or station by which to locate a boundary. At one time the source of the Arkansas River was a turning-point in our boundary with Mexico. In our national outline, as laid down in the treaty with Great Britain in 1783, there were two courses of this unsatisfactory nature, one "due north from the source of the St. Croix River to the Highlands," and the other from the junction of the Chattahoochee and Flint rivers, "straight to the head of St. Mary's River." It is to be feared that the framers of this state paper had but little familiarity with rivers except that which was gained from the geographies of their childhood, otherwise they would have realized that they could hardly select a more indeterminate boundary mark than the head or source of a river. While the theoretical or ideal river may be followed along its main branch to some unmistakable fountain head, the real stream does not always fulfill these favorable conditions. Sometimes it rises in a swamp or lake of great extent; sometimes it forks into two or more branches of equal size, and thus it becomes hydra-headed; and sometimes its source in summer, when the springs are dried up, is many a mile down the valley from its headwaters in the rainy season. In this case it becomes necessary for the treaty to be supplemented by a commission "to particularize the latitude and longitude" of the river's source. Such was provided for by the fifth article of the treaty of 1794 with Great Britain, to clear away the doubts as to "what was truly intended under the name of the river St. Croix." Here we have the incongruity of commissioning a body of men to discover what was in the thoughts of a previous assembly, when in all probability the originals themselves could not have told what they meant. It is in keeping with the occult processes of geographical diplomacy, in which conventions explain treaties and the surveyor guesses at the meaning of their explanatory articles.

South Carolina has gone into history with credit for a supposed

cession to the United States of a strip of territory extending from her present western border to the Mississippi River, when, in fact, she had no such land to give. This mythical territory was duly transferred by South Carolina, accepted by the United States, divided between Georgia and Mississippi, and frequently mentioned in the state papers of a hundred years ago, and it is not astonishing that the historian should treat it as a reality. An investigation shows that when Georgia was detached from South Carolina its northern boundary was drawn, by charter, westward to the south seas from the head of Savannah River, or from its intersection with the north boundary of South Carolina, should this stream reach so far. Thereupon South Carolina contended that the head of the Savannah River was at the confluence of its tributaries, the Tugaloo and Keowee Rivers, where it lost its name, and laid claim to the zone of America situated between the latitude of that junction and the parallel of thirty-five degrees, the south boundary of North Carolina. She found this ground untenable, however, and was obliged to recede from it in the Beaufort Convention of 1787, when she relinquished all title to the territory which she afterward ceded to the United States.

"Northwestward" was the original description of the course of the western boundary of Maine. In 1737 it became necessary to learn what this direction was, in order to survey the line. "The agents for New Hampshire at the Court of Commissioners," says Hutchinson, "insisted that everybody understood 'northwestward' to be north a little, perhaps less than a quarter of a point, west." On the other hand, Massachusetts, the proprietor of Maine, claimed that it meant from southeast to northwest, in a direction perpendicular to the general line of the coast. But the commissioners, in their wisdom, decided that "northwestward" meant north two degrees west.

With the diffusion of geographical knowledge these loose methods of establishing boundaries are going out of vogue, and the immutable lines of meridians and parallels are coming into favor. Over these, unvarying as the stars themselves, there is no possibility of war, except, perhaps, a bloodless war of the astronomers. Mountains may crumble, rivers may turn aside, and their names may be lost as languages change, and still the meridian or parallel can be recovered though forgotten for a hundred years.

These imaginary lines, then, are the safest for boundary purposes. Of natural objects a mountain range would be the best were it not for

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the fact that it wears its nomenclature almost as lightly as the clouds which rest upon its summit, and the same name does not invariably mean the same thing to all men. As there is comparatively little communication of ideas across a mountain, it often happens that a peak or range has a name for each side, like the two-faced shield of the old story. A stream, however, along which people have their habitations and travel freely, can be more surely identified, and hence a boundary drawn along a mountain range, which is described as the watershed between two rivers, will admit of no doubt or dispute.

All boundaries traced along the edge of water surfaces or along the channels of streams must partake, to a certain extent, of that instability for which water is celebrated. The most northwestern point of the Lake of the Woods, as established by the surveyors in 1825, was found to be several feet under water in 1872. The States bounded by the Mississippi River are constantly gaining or losing in area by the shifting of the channel of that stream from one side to the other of its bed, and, not infrequently, by the cut-off and transfer of entire promontories from one political division to another.

In some cases a meridional boundary of great length is dependent for its position upon the mouth of some river, and a change in the place of this river mouth causes a transfer of a long strip of territory of width equal to this displacement. The eastern boundary of Washington Territory runs due north from the mouth of the Clear Water River, and the east boundary of Oregon extends south from the mouth of the Owyhee. Until these boundaries shall be marked and accepted the areas of Oregon and Washington will fluctuate with the sands at the junctions of these streams.

Following the establishment of a boundary by law or treaty comes the survey and mapping of it if it be a natural division, or the location and marking of it if it be an arbitrary line. Owing to the faults inherent in even the best surveys, the monuments which designate the artificial boundary are rarely in their proper place, as intended by the law. For instance, the southwest boundary of Nevada, separating that State from California, should be a straight line originating at the intersection of the thirty-ninth parallel of latitude with the one hundred and twentieth degree of longitude, and running thence to the point where the thirty-fifth parallel crosses the Colorado River. The intersection above mentioned as an origin being out on the surface of Lake Tahoe, it became a rather difficult task to locate this great circle proceeding therefrom. So difficult was it, indeed, that the astronomer

traced it half a mile from its rightful position, as has been shown by subsequent surveys. Where, then, is the boundary between California and Nevada? The law says it shall follow a certain course, while the surveyor, the agent of the law, has planted his monument elsewhere, leaving between the boundary as intended and as marked a doubtful strip of territory half a mile in width. Upon the decision of this question depends the citizenship of the people who live on this disputed border. The answer is simple. The line described by the monuments is the official interpretation of the great circle proposed by the law, and, until the States concerned shall take cognizance of the error of its position, it will remain the true boundary between them.

To avoid the confusion which would result from the rectification of the boundary and the transfer of territory from one State to another, it is customary to legalize and accept, by some action of treaty or legislative chamber, the line of demarcation as run. In 1825 the Choctaw Indians ceded to the United States that portion of their land "lying east of a line beginning on the Arkansas one hundred paces east of Fort Smith, and running thence due south to Red River." The United States surveyor, in attempting to lay out this meridian, traced and marked a line which deflected seriously to the westward, thus depriving the Indians of more territory, by over two hundred square miles, than they had agreed to relinquish. A half century later, in 1875, Congress declared the line as originally surveyed and marked to be the permanent boundary with Arkansas, and, having in view the the compensation of the Indians for the land of which they had been unjustly dispossessed by the error of the surveyor, it ordered a calculation of the area of the same.

A case somewhat similar occurs in connection with the northern boundary of New York and Vermont, which, according to all treaty stipulations from 1782 to 1842, followed the forty-fifth parallel from the Connecticut River to the St. Lawrence. But, as was afterwards discovered, the boundary *de facto*, as indicated by the marks of the surveyor, did not agree with the boundary *de jure*, the forty-fifth parallel. The former was in some places more than a mile north of the latter, and the resulting gain of area to the United States was at least a hundred square miles. Rather than undergo the international disturbance which would follow the removal of a familiar boundary, the erroneous location was formally adopted by the Webster-Ashburton treaty in 1842, which ratified "the old line of boundary surveyed and

marked by Valentine and Collins, previously to the year 1774, *as the forty-fifth degree of north latitude*, and which has been known and understood to be the line of actual division."

It is a hopeful sign of better things that the boundaries between our newer States and Territories, however unsettled and uncivilized they may be, are drawn with more method, regularity and scientific skill than those which separate the original thirteen. The limits of Wyoming and New Mexico are far better known than those of Virginia and Tennessee, and in the same proportion their areas can be more accurately ascertained. Of late years all meridional boundaries have been referred to Washington, instead of to the meridian of Greenwich, formerly our standard. But, however flattering to our national pride this new origin may be, it has brought confusion into our popular geographies, which too often make the full degree from Washington and Greenwich coincide, thus leading the student into error; and, with the approaching change in the position of the observatory at Washington, this confusion will be worse confounded.

The irregular and broken perimeters of many of our older States are remarkable. In the eastern boundary of New York, from Long Island Sound to the headwaters of Lake Champlain, there are no less than twenty courses, varying in length from six chains to more than fifty miles, and all designated by their magnetic bearings, as the needle pointed at different times in the last century. This apparently purposeless traverse line, where one direct meridional course would seem so appropriate, may be attributed to the vicissitudes which attend the establishment of a border, prolonged throughout two or three hundred years, instead of being defined by one compact and traced by one survey. Two centuries of encroachment and repulse of rival colonies, litigation and compromise, cession and retrocession, maintenance of pride of State and deference to the convenience of the public, must have produced a series of fragmentary surveys which, when joined by connecting links equally fragmentary, necessarily resulted in a patchwork of a boundary like the one in question.

Engineers recognize a difference between the road which is made and the road which grows. One is the fruit of a tenacious design, which, by means of the survey, looks for the most direct and favorable route; the other is the result of each traveler's following in the footsteps of his predecessor, thus imitating the aimless wanderings of the aboriginal who first broke the trail. There are also boundaries which are made and boundaries which grow, and, unfortunately, a large pro-

portion of the State lines of the Atlantic coast are of the latter class, as their eventful history and zigzag shape attest.

One of the determining influences in the position of the boundary between New York and Massachusetts was the frequent meeting of prize-fighters on a small tract in the southwest corner of the latter Commonwealth. This locality was almost inaccessible from the east, and, in order to extend the more convenient jurisdiction of New York over it, it was ceded to that State in 1855.

This process of boundary growth is slow and tedious. The line between Rhode Island and Massachusetts is yet involved in uncertainty. Although the amount of territory at stake may be counted by acres, the loss or gain of a few acres is no trifle to a State like Rhode Island. The strife over the dividing line between Connecticut and New York began in the seventeenth century, when it separated the early English and Dutch settlers, and was only fully and finally settled in 1879. To the careless wording of the grants of Charles II. much of this trouble is due. In this monarch's charter of the English colony of Connecticut he described it as bounded "on the south by the sea." A few years later he granted the country occupied by the Dutch, together with Long Island, to the Duke of York. The English people on the eastern half of Long Island claimed membership of the colony of Connecticut by the terms of its charter and objected to their transfer to New York. Thereupon a dispute arose concerning the meaning of the words, "the sea"—whether they referred to the broad Atlantic or to Long Island Sound. The commissioners to whom this vexed question was given repeated the confusion of the two patents in the following words: "We do declare and order that the southern bounds of Connecticut is the sea, and that Long Island is to be under the government of his royal highness, the Duke of York." Thus, by the loose phraseology of his ungeographical majesty, Charles II., Connecticut lost the valuable island which lies before her door, and New York gained this sea front as a suburb to her great city.

Indeed, the methods by which New York has acquired her coast line throughout will hardly bear analysis. Questionable rulings, supported by the confidence which comes from secure possession, have perverted the obvious meaning of original grants until an all but inland State has gained a seaboard of more than a hundred miles in length. The possession of Staten Island by New York is termed by New Jersey an act of usurpation, and with much appearance of

justice. In parting with that territory which is now the State of New Jersey, the Duke of York granted the tract of land "lying and being to the westward of Long Island and Manhattan's Island, and bounded on the east, part by the main sea, and part by Hudson's River." While these directions seem to explicitly require that the boundary line should be drawn down New York Bay and through the Narrows, yet New York, from the time of the organization of her government, has held Staten Island, in spite of the apparently just claim of New Jersey, which claim ceased only in 1834, when a board of commissioners between the conflicting States awarded the island to New York.

Prior to that date not only had New York asserted her right to the islands in these boundary waters, but also to the waters themselves, as far as the western shore, but by the compromise then effected New Jersey reaped the doubtful advantage of a boundary line drawn down the middle of Hudson River and New York Bay, giving her the ownership of the land under the water and west of this line, but leaving the surface of the water under the jurisdiction of New York. In this manner a portion of the area of New Jersey remains subject to the laws of New York; but this equivocal proprietorship finds a compensation in the fact that in Staten Island Sound and Raritan Bay there are New York waters under the legislative control of New Jersey. This novel division of the jurisdiction of the two States is probably useful in order to efficiently police these waters, as an authority ending at so indeterminate a limit as the middle of a river might be easily evaded or disputed; but in computing the contents of one of these States it gives rise to the question, Is the area of a political division that territory which is included within its nominal boundaries, or that other extent which is covered by its legislative authority? In this case it is manifestly the former, since the State of New Jersey not only possesses the land at the bottom of that portion of the river and bay inclosed by her boundaries, but also regulates the fisheries in these waters.

Nowadays, in ceding a tract of land or in erecting a State or Territory with fluvial boundaries, it is customary to precisely describe these bounds as following the middle of the main channel of the river. This secures to each of the adjoining countries equal possessory rights in the stream which separates them. But in the old times, when land was so plenty that indifference on this subject was more excusable than now, and when lawyers and legal quibbles were so few that a contract

was interpreted according to its obvious meaning, the framers of constitutions and charters did not particularize their intentions as they should have done. Many of our older States have grown out of land grants and cessions which have been described as extending from one river or bay to another, without providing for any possession of these boundary waters. Whatever may have been the spirit of these papers, the States to reap advantage from the carelessness of their wording have too often held them strictly to the letter, claiming the boundary waters as entirely their own.

The grant which is the foundation of the present State of New Jersey extended by charter to the Delaware bay and river on the west. Although New Jersey, through various compacts and concessions and the established usage of centuries, now feels securely established in the possession of the eastern half of the Delaware River, she cannot yet show a clear title to a corresponding portion of the bay. When New York was under the king it extended in the northeast, by royal definition, *to* the Connecticut River; so, when Vermont emancipated herself from the jurisdiction of New York she found herself without any share in the stream which forms her eastern boundary. The board of arbitrators appointed a few years ago to decide upon the boundary between Maryland and Virginia have drawn it along the south shore of the Potomac, thus throwing that river entirely into Maryland. But what Virginia lost in the east she retained in the west, when, in 1784, she ceded to the United States her possessions northwest of the Ohio River. From this territory the States of Ohio, Indiana and Illinois have been in part constructed, and, as a consequence of the insufficient language of the cession, these States have no proprietary rights in the Ohio River beyond low-water mark. West Virginia even goes so far as to claim, in her constitution, "the bed, banks and shores of the Ohio River."

It is unfortunate that this unnatural system should have ever obtained in the selection of boundaries, as every principle of justice and symmetrical division demands that the line of demarcation should follow the *filum aquæ*. To draw it elsewhere is to introduce jealousy and ill-feeling where there should be naught but neighborly courtesy and good-will.

After the boundary is scientifically projected and clearly described, it yet remains to mark it with monuments which shall be permanent, and which we, warned by the litigation and loss that we have inherited from our ancestors in this regard, may leave as a valuable

heritage to the generations which are to follow us. Our forefathers in England did not take this trouble, but were accustomed, instead, to annually "beat the bounds" by perambulating the village limits and the parish outline in order to refresh their memories. Whenever, it is said, they came to a particularly important turning-point they emphasized it upon the mind of one of the rising generation by administering to him, then and there, a vigorous fustigation, the local circumstances of which he would not be likely to forget until his dying day.

Although in theory our methods are not so crude as this, yet in practice some of our surveys of the present day are scarcely more efficient and lasting. It is difficult for a person to travel through the great West without hearing two stories, as stereotyped as Western stories usually are, which illustrate the ephemeral nature of our landmarks. He learns of the surveyor who was in the habit of lighting his pipe before throwing up the mound which perpetuates the township or section corner, and throwing the charred end of the match into the pile of earth, in order to fulfill the requirement that "a portion of charcoal" be deposited therein. Again, he hears of the two travelers journeying across the plains. One of them, seeing a stake by the roadside, and anticipating a scarcity of firewood at their next camp, pulls it up and throws it into the wagon. As he is about to build a fire with it in the evening his comrade recognizes it as a land survey post, and, not to speak of the more recent statute against this action, he reminds him of the Levitical malediction, "Cursed be he that removeth his neighbor's landmark." Whereupon the offender seeks to make what restitution he can, and drives the stake into the ground by his side, thus unthinkingly establishing one corner of a quarter section twenty miles away from the other three.

One of William Penn's purchases from the Indians was of a tract of land extending "two days' journey with an horse up into the country." Many of the troublesome Spanish grants with which the California land office is embarrassed have been surveyed in a similar manner. The length of a line has been measured by the travel of a horse; its direction has been estimated by a glance at the sun, and its terminal points designated by a neighboring tree which is now cut down, or a pond which is now dried up. What wonder, then, that the annals of California should teem with litigation, violence, and even murder, over disputed boundary lines?

Very great accuracy, however, has never been expected in our land surveys. Error is provided for by the clause, "as nearly as may be,"

which accompanies statements of land area. Besides, the division of townships is but an insignificant operation compared with the drawing of boundaries around States and nations, and we have no right to strain at this gnat while swallowing the camel which is exemplified, for example, in the eastern boundary of the Empire State of New York. This, according to the latest edition of the Revised Statutes, is marked, among other objects, by the following: "a rock at the ancient road or wading-place in Byram River"; "a red or black oak tree"; "a place on the westerly bank of the Hosick River, where a hemlock tree heretofore stood"; "a large, roundish rock"; "a white oak tree at the southwest corner of the land occupied in 1814 by Thomas Wilsey"; "a fence dividing the possessions of Thomas Wilsey, junior, and Emery Hunt"; and "a bunch of hornbeam saplings."

Is all of this in keeping with the dignity and pride of a great State like New York? In all soberness, would it not have been a wise precaution to have adopted the English custom and flogged some bright boy on the spot "where a hemlock tree heretofore stood?" Could not the surveyors have been a little more definite and stated whether the "roundish rock" was or was not as big as a piece of chalk? And if Thomas Wilsey should move his fence and some ruthless hand should cut down the hornbeams, what is to prevent Vermont from lapsing to her parent State?

The south boundary of Tennessee, separating that State from Georgia, begins at a certain rock which is "due south from near the centre of the old Indian town of Nickajack," and thence runs due east, "leaving old D. Ross two miles and eighteen yards in the State of Tennessee." Here it will be observed that, with a short-sightedness almost criminal, the surveyors have referred their line to "old D. Ross," when, it is safe to infer, young D. Ross would have been very much more durable as a landmark, and—this was in 1819—might have even lasted to the present day.

It is probable, however, that the people of Virginia would be thankful for even hornbeams and old men to perpetuate their southern boundary. This line, originally ordered to follow the parallel of thirty-six degrees thirty minutes, has been surveyed at different periods along an erratic route several minutes north of its intended position, and marked by blazes on trees which have now disappeared. Thus, while North Carolina gains more than a thousand square miles of territory by the error of this survey, as tradition hands it down, she

is left in painful uncertainty as to the legitimate extent of her possessions. So much so, indeed, that her State Geologist, Professor Kerr, dwells in his report upon the desirability that "North Carolina should know more of her whereabouts on the planet, and how much there is of her." And the Census Bureau in Washington, in its latest efforts to obtain the areas of the States and Territories, has often found occasion to sympathize with Professor Kerr in his distress.

There is a moral to this discreditable history of our boundaries. In the early days of America it was perhaps not astonishing that an arrogant Roman pontiff should draw a boundary line from pole to pole, as was done by Alexander VI. in his grant of heathen lands to Castile and Arragon, or for an untraveled English king to charter a colony extending westward from the Atlantic coast to the "south seas," or Pacific Ocean, as was once the custom; but the time has arrived to substitute for this vagueness some of the precision, scientific skill and geographical knowledge for which the nineteenth century is celebrated. It is time to pass from the local surveyor of the George Washington type to the educated geographer, from the compass to the theodolite, from sextant to zenith telescope, from Gillespie to Clarke, and from the blazed tree to the imperishable obelisk of stone or iron. In other words, our national and state boundary determinations should be made by some such trained and permanent corps as the Coast and Geodetic Survey, which has always at its command men, methods and implements of the very best. The casual surveyor, working by contract, is released from responsibility as soon as his line is completed and accepted, and before there is time to test it; but the Coast Survey, with its reputation to maintain, could not afford to do imperfect work. The stamp of its approval would be a guarantee of wisdom in the selection of a boundary, accuracy in its survey, and uniformity and durability in its monuments.

It is a mistake to suppose that this coöperation of a national organization would be an invasion of the rights of the States. While no State with any pretensions to dignity can claim a moral right to cordon itself with fences, saplings, roundish rocks, old men, apple trees and barns, it certainly has an incontestable right to the use of this national survey, in which it owns a part. The farmer, when he summons a surveyor to measure his land for him, does not consider that his rights are invaded; and it is to be deplored by all who are interested in scientific progress that a State should ever allow its local pride to deprive it of services the equal of which its own citizens,

however able they may be, cannot hope to render. And what has here been said of the Coast and Geodetic Survey is equally applicable to the United States Geological Survey, which, although intended as a national institution, has hitherto been restricted to the unsettled outskirts of the nation.

FRANK D. Y. CARPENTER.

BOOK REVIEWS.

Volume XIII. of the Encyclopædia Britannica[1] is the second which has appeared during the year, and extends from "Infant" to "Kant." Examination shows its contents to consist of about 550 articles, among which are a number of exhaustive treatises upon leading subjects. Among them the following are worthy of special notice:

"Infinitesimal Calculus," by Benj. Williamson, Professor of Mathematics, Trinity College, Dublin. To this subject are devoted 68 pages.

The article on "Insanity," by J. Batty Luke and Alex. Gibson, comprises 19 pages. In this short space is given a complete *resumé* of the subject, both from the medical and the legal point of view.

"Inscriptions" occupies 20 pages. This article, the joint work of several writers, is well illustrated by figures of Greek, Latin and other inscriptions.

The subject "Insects" is treated by Robert McLachlan, F.R.S. Within the short space of 14 pages is condensed a most admirable treatise upon this great order of animal life.

"Insurance—Fire, Marine and Life," occupies 27 pages. Each of the sub-heads is discussed by a well-known actuary or other authority.

The article upon "Ireland" is naturally one of the leading articles in the volume, comprising 59 pages, with a map.

To "Iron," by C. R. Alder Wright, is given not fewer than 83 pages. This treatise comprises the chemistry of iron and its ores and its metallurgy, including the various processes of manufacture of cast and wrought iron and steel, amply illustrated by figures of furnaces and other smelting works.

[1] Volume XIII. Encyclopædia Britannica. Edinburgh Subscription Edition. (Imported by Charles Scribner's Sons, New York.)

To "Israel," by Dr. Julius Wellhausen, is devoted 37 pages; to "Italy," the several sub-heads of which are treated by different writers, is given 83 pages, with three full-page maps; "Japan," by T. R. H. McClatchie and Sir Rutherford Alcock, occupies 24 pages; "Java," 10 pages; "Jesus Christ," 17 pages, and "Kant," with which the volume closes, 10 pages.

The volume contains numerous wood-cuts, distributed through the text, besides 13 handsomely engraved full-page plates, among which are admirable maps of Iowa and Kansas, the first of the new series of maps of the States to be embodied in the work. These new maps are among the finest specimens of cartographic work ever produced in this country, both in accuracy and fullness of compilation and in neatness of execution. Similar maps to accompany the descriptions of the States which have appeared in previous volumes either without maps or with less complete ones, will shortly be furnished to all buyers of the work who have the earlier volumes.

The cosmopolitan character of this celebrated encyclopædia, coupled with the fact that all articles distinctively American are treated by the best American writers, commend it to the people of this country. Of the value of its extended articles it is enough to say that a number of them have been republished, with permission, for use as text books in several of our leading colleges.

We understand that, in order to expedite the publication of the remaining volumes, the editorial staff has been strengthened, and it is expected that hereafter at least three volumes will be published each year.